# 504555549 09/20/2017

# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4602258

UBMISSION TYPE:		NEW ASSIGNMENT	NEW ASSIGNMENT				
NATURE OF CONVEYA	NCE:	ASSIGNMENT	ASSIGNMENT				
CONVEYING PARTY D	ΑΤΑ						
		Name	Execution Date				
NADIA BRUGGER			09/19/2017				
XIAOLING CHEN			09/20/2017				
ESTHER CLEARY			09/20/2017				
BRIAN A. SHERER			09/19/2017				
RECEIVING PARTY DA	TA						
Name:	Merck Pa	Merck Patent GmbH					
Street Address:	Frankfurter Strasse 250						
City:	Darmstadt						
State/Country:	GERMANY						
Postal Code:	64293						
		Number					
Property Type			-				
Application Number:	1	5670068					
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WHEREAS, Brugger, Nadia, a citizen of Switzerland, residing at 7 Haskell Street, Cambridge, MA 02140 (UNITED STATES OF AMERICA) (hereinafter, "Assignor") has invented certain new and useful improvements relating to TLR7/8 ANTAGONISTS AND USES THEREOF (hereinafter, the "Invention") as described in U.S. Patent Application No. 15/670,068, filed on AUG/07/2016 (hereinafter, the "Application"); and

WHEREAS, Merck Patent GmbH, an entity organized and existing under the laws of GERMANY, having a place of business in Frankfurter Strasse 250, 64293 Darmstadt (GERMANY), together with any successors, assigns and legal representatives thereof (hereinafter, called the "Assignee") is desirous of acquiring the entire right, title and interest, for all countries, in and to said Invention and Application.

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, each Assignor hereby sells, assigns, transfers and conveys unto Assignee the entire right, title and interest of such Assignor in and to said Invention and Application, and all divisions, renewals and continuations thereof, and any and all Letters Patent of the United States which may be granted thereon, and all reissues, reexaminations, and extensions thereof, and all priority rights under all available international agreements, treaties and conventions for the protection of intellectual property in its various forms in every participating country, and all applications for Letters Patent or other grants of protection of proprietary rights including, but not limited to, inventor's certificate, utility model, utility certificate, patent of importation, registration of patent and industrial design registration which may be filed, and which may be granted, upon said inventions in any countries or regions foreign to the United States, and all reissues, renewals and extensions thereof; and each Assignor hereby authorizes and requests the Commissioner for Patents and Trademarks of the United States, and all officials of countries or regions foreign to the United States having authority so to do, to issue all such Letters Patent or other grants of protection upon said inventions to the Assignee or to such nominees as it may designate;

AND each Assignor hereby authorizes and empowers the Assignee or nominees to invoke and claim for any application for such Letters Patent or other grants of protection for said inventions filed by it or them, the benefit of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by a convention which may henceforth be substituted for it, and to invoke and claim such right of priority without further written or oral authorization from such Assignor;

AND each Assignor hereby consents that a copy of this Assignment shall be deemed a full and formal equivalent of any assignment, consent to file or like document which may be required in any country or region for any purpose and more particularly in proof of the right of the Assignee or nominees to claim the aforesaid benefit of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by any convention which may henceforth be substituted for it;

AND each Assignor hereby covenants that such Assignor has the full right to convey the right, title and interest herein assigned and that such Assignor has not executed and will not execute any agreement in conflict herewith;

AND each Assignor hereby covenants and agrees that such Assignor will communicate to Assignee or nominees all facts known to such Assignor pertaining to the Invention, and testify in all legal proceedings, sign all lawful papers, execute all divisional, continuation, substitute and reissue applications, make all rightful oaths and declarations and in general perform all lawful acts necessary or proper to aid Assignee or nominee in obtaining, maintaining and enforcing all lawful patent or other grants of protection of the Invention in any and all countries and regions.

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Brugger, Nadia State of massachuse4.5 County of Vnick (CAAX SS:

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On this <u>1</u> day of <u>1</u>, 20<u>1</u>, before me personally appeared **Brugger**, Nadia, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person named in and who executed the foregoing instrument and thereupon acknowledged to me that they executed the same of their own free will for the purposes set forth, and for a valuable consideration.

Notary Public Commission Expires June 28, 2020

WHEREAS, Chen, Xiaoling, a citizen of CANADA, residing at 250 Hammond Pond Pkwy, U906S, Chestnut Hill, MA 02467 (UNITED STATES OF AMERICA) (hereinafter, "Assignor") has invented certain new and useful improvements relating to TLR7/8 ANTAGONISTS AND USES THEREOF (hereinafter, the "Invention") as described in U.S. Patent Application No. 15/670,068 filed on AUG/07/2017 (hereinafter, the "Application"); and

WHEREAS, Merck Patent GmbH, an entity organized and existing under the laws of GERMANY, having a place of business in Frankfurter Strasse 250, 64293 Darmstadt (GERMANY), together with any successors, assigns and legal representatives thereof (hereinafter, called the "Assignee") is desirous of acquiring the entire right, title and interest, for all countries, in and to said Invention and Application.

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, each Assignor hereby sells, assigns, transfers and conveys unto Assignee the entire right, title and interest of such Assignor in and to said Invention and Application, and all divisions, renewals and continuations thereof, and any and all Letters Patent of the United States which may be granted thereon, and all reissues, reexaminations, and extensions thereof, and all priority rights under all available international agreements, treaties and conventions for the protection of intellectual property in its various forms in every participating country, and all applications for Letters Patent or other grants of protection of proprietary rights including, but not limited to, inventor's certificate, utility model, utility certificate, patent of importation, registration of patent and industrial design registration which may be filed, and which may be granted, upon said inventions in any countries or regions foreign to the United States, and all reissues, renewals and extensions thereof; and each Assignor hereby authorizes and requests the Commissioner for Patents and Trademarks of the United States, and all officials of countries or regions foreign to the United States having authority so to do, to issue all such Letters Patent or other grants of protection upon said inventions to the Assignee or to such nominees as it may designate;

AND each Assignor hereby authorizes and empowers the Assignee or nominees to invoke and claim for any application for such Letters Patent or other grants of protection for said inventions filed by it or them, the benefit of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by a convention which may henceforth be substituted for it, and to invoke and claim such right of priority without further written or oral authorization from such Assignor;

AND each Assignor hereby consents that a copy of this Assignment shall be deemed a full and formal equivalent of any assignment, consent to file or like document which may be required in any country or region for any purpose and more particularly in proof of the right of the Assignee or nominees to claim the aforesaid benefit of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by any convention which may henceforth be substituted for it;

AND each Assignor hereby covenants that such Assignor has the full right to convey the right, title and interest herein assigned and that such Assignor has not executed and will not execute any agreement in conflict herewith;

AND each Assignor hereby covenants and agrees that such Assignor will communicate to Assignee or nominees all facts known to such Assignor pertaining to the Invention, and testify in all legal proceedings, sign all lawful papers, execute all divisional, continuation, substitute and reissue applications, make all rightful oaths and declarations and in generl perform all lawful acts necessary or proper to aid Assignee or nominee in obtaining, maintaining and enforcing all lawful patent or other grants of protection of the Invention in any and all countries and regions.

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Chen, Xiaoling
State of Massachuse445
County of Midd QALX SS:

9/20/17 Date

Notary Public

MONA BIELER Notery Public WHEALTH OF MASSACHUSETT My Commission Expires June 26, 2020

WHEREAS, Cleary, Esther, a citizen of the United States, residing at 22 Murdock Street, Somerville, MA 02145 (UNITED STATES OF AMERICA) (hereinafter, "Assignor") has invented certain new and useful improvements relating to TLR7/8 ANTAGONISTS AND USES THEREOF (hereinafter, the "Invention") as described in U.S. Patent Application No. 15/670,068 filed on AUG/07/2017 (hereinafter, the "Application"); and

WHEREAS, Merck Patent GmbH, an entity organized and existing under the laws of GERMANY, having a place of business in Frankfurter Strasse 250, 64293 Darmstadt (GERMANY), together with any successors, assigns and legal representatives thereof (hereinafter, called the "Assignee") is desirous of acquiring the entire right, title and interest, for all countries, in and to said Invention and Application.

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, each Assignor hereby sells, assigns, transfers and conveys unto Assignee the entire right, title and interest of such Assignor in and to said Invention and Application, and all divisions, renewals and continuations thereof, and any and all Letters Patent of the United States which may be granted thereon, and all reissues, reexaminations, and extensions thereof, and all priority rights under all available international agreements, treaties and conventions for the protection of intellectual property in its various forms in every participating country, and all applications for Letters Patent or other grants of protection of proprietary rights including, but not limited to, inventor's certificate, utility model, utility certificate, patent of importation, registration of patent and industrial design registration which may be filed, and which may be granted, upon said inventions in any countries or regions foreign to the United States, and all reissues, renewals and extensions thereof; and each Assignor hereby authorizes and requests the Commissioner for Patents and Trademarks of the United States, and all officials of countries or regions foreign to the United States having authority so to do, to issue all such Letters Patent or other grants of protection upon said inventions to the Assignee or to such nominees as it may designate;

AND each Assignor hereby authorizes and empowers the Assignee or nominees to invoke and claim for any application for such Letters Patent or other grants of protection for said inventions filed by it or them, the benefit of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by a convention which may henceforth be substituted for it, and to invoke and claim such right of priority without further written or oral authorization from such Assignor;

AND each Assignor hereby consents that a copy of this Assignment shall be deemed a full and formal equivalent of any assignment, consent to file or like document which may be required in any country or region for any purpose and more particularly in proof of the right of the Assignee or nominees to claim the aforesaid benefit of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by any convention which may henceforth be substituted for it;

AND each Assignor hereby covenants that such Assignor has the full right to convey the right, title and interest herein assigned and that such Assignor has not executed and will not execute any agreement in conflict herewith;

AND each Assignor hereby covenants and agrees that such Assignor will communicate to Assignee or nominees all facts known to such Assignor pertaining to the Invention, and testify in all legal proceedings, sign all lawful papers, execute all divisional, continuation, substitute and reissue applications, make all rightful oaths and declarations and in general perform all lawful acts necessary or proper to aid Assignee or nominee in obtaining, maintaining and enforcing all lawful patent or other grants of protection of the Invention in any and all countries and regions.

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Esther State of County of SS:

On this 20 day of 20/20/20, before me personally appeared Cleary, Esther, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person named in and who executed the foregoing instrument and thereupon acknowledged to me that they executed the same of their own free will for the purposes set forth, and for a valuable consideration.

Notary Public MONA BIELER Notary Public FALTH OF MASSACINASET Commission Expires RAW June 28, 2020

WHEREAS, Sherer, Brian A., a citizen of the UNITED STATES OF AMERICA, residing at 57 Harris Road, Nashua, NH 03062 (UNITED STATES OF AMERICA) (hereinafter, "Assignor") has invented certain new and useful improvements relating to TLR7/8 ANTAGONISTS AND USES THEREOF (hereinafter, the "Invention") as described in U.S. Patent Application No. 15/670,068, filed on AUG/07/2017 (hereinafter, the "Application"); and

WHEREAS, Merck Patent GmbH, an entity organized and existing under the laws of GERMANY, having a place of business in Frankfurter Strasse 250, 64293 Darmstadt (GERMANY), together with any successors, assigns and legal representatives thereof (hereinafter, called the "Assignee") is desirous of acquiring the entire right, title and interest, for all countries, in and to said Invention and Application.

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, each Assignor hereby sells, assigns, transfers and conveys unto Assignee the entire right, title and interest of such Assignor in and to said Invention and Application, and all divisions, renewals and continuations thereof, and any and all Letters Patent of the United States which may be granted thereon, and all reissues, reexaminations, and extensions thereof, and all priority rights under all available international agreements, treaties and conventions for the protection of intellectual property in its various forms in every participating country, and all applications for Letters Patent or other grants of protection of proprietary rights including, but not limited to, inventor's certificate, utility model, utility certificate, patent of importation, registration of patent and industrial design registration which may be filed, and which may be granted, upon said inventions in any countries or regions foreign to the United States, and all reissues, renewals and extensions thereof; and each Assignor hereby authorizes and requests the Commissioner for Patents and Trademarks of the United States, and all officials of countries or regions foreign to the United States having authority so to do, to issue all such Letters Patent or other grants of protection upon said inventions to the Assignee or to such nominees as it may designate;

AND each Assignor hereby authorizes and empowers the Assignee or nominees to invoke and claim for any application for such Letters Patent or other grants of protection for said inventions filed by it or them, the benefit of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by a convention which may henceforth be substituted for it, and to invoke and claim such right of priority without further written or oral authorization from such Assignor;

AND each Assignor hereby consents that a copy of this Assignment shall be deemed a full and formal equivalent of any assignment, consent to file or like document which may be required in any country or region for any purpose and more particularly in proof of the right of the Assignee or nominees to claim the aforesaid benefit of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by any convention which may henceforth be substituted for it;

AND each Assignor hereby covenants that such Assignor has the full right to convey the right, title and interest herein assigned and that such Assignor has not executed and will not execute any agreement in conflict herewith;

AND each Assignor hereby covenants and agrees that such Assignor will communicate to Assignee or nominees all facts known to such Assignor pertaining to the Invention, and testify in all legal proceedings, sign all lawful papers, execute all divisional, continuation, substitute and reissue applications, make all rightful oaths and declarations and in general perform all lawful acts necessary or proper to aid Assignee or nominee in obtaining, maintaining and enforcing all lawful patent or other grants of protection of the Invention in any and all countries and regions.

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Sherer, Brian A. State of Massachuset County of \_\_\_\_\_ SS:

Date

On this  $(\neg)$  day of  $\underline{Sep+enber}$ , 20  $(\neg)$ , before me personally appeared Sherer, Brian A., personally known to me (or proved to me on the basis of satisfactory evidence) to be the person named in and who executed the foregoing instrument and thereupon acknowledged to me that they executed the same of their own free will for the purposes set forth, and for a valuable consideration.

Notary Public KONA BI 86.6 Matany Public RALTH OF BARS My Commission Expres June 26, 2020