

<b>PATENT ASSIGNMENT COVER SHEET</b>
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Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT7540878

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	SECURITY INTEREST

**CONVEYING PARTY DATA**

Name	Execution Date
ADAPTIVE BIOTECHNOLOGIES CORPORATION	09/12/2022

**RECEIVING PARTY DATA**

<b>Name:</b>	ORBIMED ROYALTY & CREDIT OPPORTUNITIES IV, LP
<b>Street Address:</b>	601 LEXINGTON AVENUE, 54TH FLOOR
<b>Internal Address:</b>	C/O ORBIMED ADVISORS LLC
<b>City:</b>	NEW YORK
<b>State/Country:</b>	NEW YORK
<b>Postal Code:</b>	10022

**PROPERTY NUMBERS Total: 47**

Property Type	Number
Patent Number:	9150905
Patent Number:	9371558
Patent Number:	10214770
Patent Number:	10894977
Patent Number:	9824179
Patent Number:	9809813
Patent Number:	11214793
Application Number:	16023010
Application Number:	14777294
Patent Number:	11248253
Patent Number:	10066265
Patent Number:	10435745
Application Number:	17579900
Patent Number:	11261490
Patent Number:	10077478
Patent Number:	11254980
Patent Number:	10428325
Patent Number:	8236503
Patent Number:	10266901

PATENT

Property Type	Number
Patent Number:	10246752
Patent Number:	11001895
Application Number:	17232961
Patent Number:	9217176
Patent Number:	8795970
Patent Number:	9228232
Patent Number:	8748103
Patent Number:	8628927
Patent Number:	9416420
Patent Number:	9512487
Patent Number:	10155992
Patent Number:	10519511
Patent Number:	10760133
Patent Number:	10865453
Patent Number:	11021757
Application Number:	17316148
Patent Number:	9394567
Patent Number:	9506119
Patent Number:	9708657
Patent Number:	10077473
Patent Number:	10526650
Patent Number:	11390921
Application Number:	17812678
Application Number:	16945701
Application Number:	17343541
PCT Number:	US2021057452
PCT Number:	US2022019938
Patent Number:	11026969

**CORRESPONDENCE DATA**

**Fax Number:**

*Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.*

**Email:** akwon@cov.com

**Correspondent Name:** COVINGTON & BURLING LLP

**Address Line 1:** ONE CITY CENTER, 850 TENTH ST NW

**Address Line 2:** ATTN: PATENT DOCKET

**Address Line 4:** WASHINGTON, D.C. 20001

**ATTORNEY DOCKET NUMBER:** 34550.00099

<b>NAME OF SUBMITTER:</b>	ASHLEY M. KWON
<b>SIGNATURE:</b>	/Ashley M. Kwon/
<b>DATE SIGNED:</b>	09/15/2022

**Total Attachments: 27**

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**PATENT SECURITY AGREEMENT**

This **PATENT SECURITY AGREEMENT** (including all annexes, exhibits and schedules hereto, as the same may be amended, restated, amended and restated, modified and/or supplemented from time to time, this “**Patent Security Agreement**”) dated as of September 12, 2022, is made by Adaptive Biotechnologies Corporation (“**Grantor**”) in favor of OrbiMed Royalty & Credit Opportunities IV, LP, as Purchaser Agent (in such capacity, together with its successors and permitted assigns, “**Agent**”) for the Secured Parties (as defined in the Purchase Agreement referred to below).

**W I T N E S S E T H:**

**WHEREAS**, pursuant to that certain Purchase Agreement, dated as of September 12, 2022 (as the same may be amended, restated, amended and restated, modified, and/or supplemented from time to time, the “**Purchase Agreement**”), by and among Adaptive Biotechnologies Corporation, a Washington corporation (the “**Company**”), Agent and the Purchasers, the Company has sold, transferred, assigned and conveyed to Purchasers, and Purchasers have purchased acquired and accepted from the Company, all of the Company’s right, title and interest in and to the Revenue Interests, for the consideration and on the terms and subject to the conditions set forth in the Purchase Agreement;

**WHEREAS**, each Grantor (other than the Company) has agreed, pursuant to a Guaranty and Security Agreement of even date herewith in favor of Agent (the “**Guaranty and Security Agreement**”), to guarantee the Obligations (as defined in the Purchase Agreement) of the Company; and

**WHEREAS**, Grantor is a party to the Guaranty and Security Agreement pursuant to which the Grantor is required to execute and deliver this Patent Security Agreement.

**NOW, THEREFORE**, in consideration of the premises and to induce the Purchasers and Agent to enter into the Purchase Agreement and to induce the Purchasers to make their respective extensions of credit to the Company thereunder, Grantor hereby agrees with Agent as follows:

1. **Defined Terms**. Capitalized terms used herein without definition are used as defined in the Guaranty and Security Agreement.

2. **Grant of Security Interest in Patent Collateral**. Grantor, as collateral security for the prompt and complete payment and performance when due (whether at stated maturity, by acceleration or otherwise) of the Obligations of such Grantor, hereby mortgages, pledges and hypothecates to Agent for the benefit of the Secured Parties, and grants to Agent for the benefit of the Secured Parties a Lien on and security interest in, all of its right, title and interest in, to and under the following Collateral of such Grantor (the “**Patent Collateral**”):

(a) all of its Patents providing for the grant by or to such Grantor of any right under any Patent, including, without limitation, those referred to on Schedule 1 hereto;

(b) all reissues, reexaminations, continuations, continuations-in-part, divisionals, renewals and extensions of the foregoing; and

(c) all income, royalties, proceeds and liabilities at any time due or payable or asserted under and with respect to any of the foregoing, including, without limitation, all rights to sue and recover at law or in equity for any past, present and future infringement, misappropriation, dilution, violation or other impairment thereof.

3. Guaranty and Security Agreement. The security interest granted pursuant to this Patent Security Agreement is granted in conjunction with the security interest granted to Agent pursuant to the Guaranty and Security Agreement and each Grantor hereby acknowledges and agrees that the rights and remedies of Agent with respect to the security interest in the Patent Collateral made and granted hereby are more fully set forth in the Guaranty and Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein. In the event that any provision of this Patent Security Agreement is deemed to conflict with the Guaranty and Security Agreement, the provisions of the Guaranty and Security Agreement shall control.

4. Grantor Remains Liable. Each Grantor hereby agrees that, anything herein to the contrary notwithstanding, such Grantor shall assume full and complete responsibility for the prosecution, defense, enforcement or any other necessary or desirable actions in connection with their Patents Collateral subject to a security interest hereunder.

5. Counterparts. This Patent Security Agreement may be executed in any number of counterparts and by different parties in separate counterparts, each of which when so executed shall be deemed to be an original and all of which taken together shall constitute one and the same agreement. Signature pages may be detached from multiple separate counterparts and attached to a single counterpart.

6. Governing Law. This Patent Security Agreement and the rights and obligations of the parties hereto shall be governed by, and construed and interpreted in accordance with, the law of the State of New York.


7. Agent Entitled to Protections. Agent shall be afforded in this Patent Security Agreement all of the same rights, powers, protections, immunities and indemnities of the Agent set forth in the Purchase Agreement and the Guaranty and Security Agreement, as if such rights, powers, protections, immunities and indemnities were specifically set forth in this Patent Security Agreement.

[SIGNATURE PAGES FOLLOW]

IN WITNESS WHEREOF, the undersigned Grantor has caused this Patent Security Agreement to be executed and delivered by its duly authorized officer as of the date first set forth above.

Very truly yours,

**ADAPTIVE BIOTECHNOLOGIES  
CORPORATION**  
as Grantor

DocuSigned by:  
  
By: \_\_\_\_\_  
3722BC2B695F704  
Name: Tycho Peterson  
Title: CFO

ACCEPTED AND AGREED  
as of the date first above written:

**ORBIMED ROYALTY & CREDIT OPPORTUNITIES IV, LP,**  
not in its individual capacity but solely in its capacity as Agent

By: \_\_\_\_\_  
Name:  
Title:

[SIGNATURE PAGE TO PATENT SECURITY AGREEMENT]

**PATENT  
REEL: 061449 FRAME: 0694**

IN WITNESS WHEREOF, the undersigned Grantor has caused this Patent Security Agreement to be executed and delivered by its duly authorized officer as of the date first set forth above.

Very truly yours,

**ADAPTIVE BIOTECHNOLOGIES  
CORPORATION**  
as Grantor

By: \_\_\_\_\_  
Name:  
Title:

ACCEPTED AND AGREED  
as of the date first above written:

**ORBIMED ROYALTY & CREDIT OPPORTUNITIES IV, LP,**  
not in its individual capacity but solely in its capacity as Agent

DocuSigned by:  
*Matthew Rizzo*  
By: \_\_\_\_\_  
Name: Matthew Rizzo  
Title: Member

[SIGNATURE PAGE TO PATENT SECURITY AGREEMENT]

SCHEDULE I  
TO  
PATENT SECURITY AGREEMENT

Patent Registrations

Applica tion #	Date File d	Publi catio n Num ber	Patent #	Gra nt Date	Title	Cou ntry Nam e
14/381, 967	08/2 8/20 14	US 2015 - 0017 652 A1	9150905	10/0 6/20 15	Compositions and Method for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Unite d State s of Amer ica
137229 68.8	05/0 8/20 13	2831 276	2831276	04/2 0/20 16	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Austr ia
201325 9544	05/0 8/20 13		2013259 544	01/0 3/20 18	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Austr alia
201727 2256	05/0 8/20 13		2017272 256	04/1 9/20 18	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Austr alia
137229 68.8	05/0 8/20 13	2831 276	2831276	04/2 0/20 16	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Belgi um
2,872,4 68	05/0 8/20 13		2872468	10/2 7/20 20	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Cana da
137229 68.8	05/0 8/20 13	2831 276	2831276	04/2 0/20 16	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Switz erlan d
161659 39.6	05/0 8/20 13	3091 089	3091089	01/2 3/20 19	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Switz erlan d
201380 022986. 6	05/0 8/20 13		ZL2013 8002298 6.6	10/0 3/20 17	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Chin a
201710 813227. 1	05/0 8/20 13	1075 8683 2	ZL 2017108 13227.1	03/3 0/20 21	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Chin a
14/594, 007	01/0 9/20 15	US 2015 - 0203 897 A1	9371558	06/2 1/20 16	Compositions and Method for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Unite d State s of Amer ica



Applica tion #	Date File d	Publi catio n Num ber	Patent #	Gra nt Date	Title	Cou ntry Nam e
15/150, 753	05/1 0/20 16	US 2016 - 0319 340 A1	1021477 0	02/2 6/20 19	Compositions and Method for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Unite d State s of Amer ica
137229 68.8	05/0 8/20 13	2831 276	6020130 06777.5	04/2 0/20 16	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Germ any
161659 39.6	05/0 8/20 13	3091 089	6020130 50287.0	01/2 3/20 19	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Germ any
16/242, 109	01/0 8/20 19	US 2019 - 0203 281 A1	1089497 7	01/1 9/20 21	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Unite d State s of Amer ica
137229 68.8	05/0 8/20 13	2831 276	2831276	04/2 0/20 16	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Den mark
137229 68.8	05/0 8/20 13	2831 276	2831276	04/2 0/20 16	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Euro pean Patent Offic e
161659 39.6	05/0 8/20 13	3091 089	3091089	01/2 3/20 19	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Euro pean Patent Offic e
151070 56.9	05/0 8/20 13	1206 789	HK1206 789	03/0 3/20 17	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Hong Kong
137229 68.8	05/0 8/20 13	2831 276	2831276	04/2 0/20 16	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Spain
161659 39.6	05/0 8/20 13	3091 089	3091089	01/2 3/20 19	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Spain
137229 68.8	05/0 8/20 13	2831 276	2831276	04/2 0/20 16	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Finla nd
137229 68.8	05/0 8/20 13	2831 276	2831276	04/2 0/20 16	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Franc e

Applica tion #	Date File d	Publi catio n Num ber	Patent #	Gra nt Date	Title	Cou ntry Nam e
161659 39.6	05/0 8/20 13	3091 089	3091089	01/2 3/20 19	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Franc e
137229 68.8	05/0 8/20 13	2831 276	2831276	04/2 0/20 16	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Unite d King dom
161659 39.6	05/0 8/20 13	3091 089	3091089	01/2 3/20 19	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Unite d King dom
137229 68.8	05/0 8/20 13	2831 276	2831276	04/2 0/20 16	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Irela nd
161659 39.6	05/0 8/20 13	3091 089	3091089	01/2 3/20 19	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Irela nd
235417	05/0 8/20 13		235417	07/3 1/20 19	Compositions and Methods Comprising a Plurality of Synthetic Template Oligonucleotides for Measuring and Calibrating Amplification Efficiency and Bias In Multiplexed PCR Reactions	Israe l
137229 68.8	05/0 8/20 13	2831 276	5020160 0007351 5	04/2 0/20 16	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Italy
161659 39.6	05/0 8/20 13	3091 089	5020190 0002760 6	01/2 3/20 19	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Italy
2015- 510516	05/0 8/20 13		5756247	06/0 5/20 15	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Japan
2015- 109223	05/0 8/20 13		6385889	08/1 7/20 18	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Japan
10- 2014- 703082 8	05/0 8/20 13		10- 1621643	05/1 0/20 16	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Repu blic of Kore a
MX/a/2 014/013 443	05/0 8/20 13		354329	02/2 7/20 18	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Mexi co
137229 68.8	05/0 8/20 13	2831 276	2831276	04/2 0/20 16	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Neth erlan ds
161659 39.6	05/0 8/20 13	3091 089	3091089	01/2 3/20 19	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Neth erlan ds

Applica tion #	Date File d	Publi catio n Num ber	Patent #	Gra nt Date	Title	Cou ntry Nam e
137229 68.8	05/0 8/20 13	2831 276	2831276	04/2 0/20 16	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Norway
161659 39.6	05/0 8/20 13	3091 089	3091089	01/2 3/20 19	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Norway
201414 3942	05/0 8/20 13		2631797	09/2 6/20 17	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Russian Federation
137229 68.8	05/0 8/20 13	2831 276	2831276	04/2 0/20 16	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Sweden
161659 39.6	05/0 8/20 13	3091 089	3091089	01/2 3/20 19	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Sweden
112014 07107V	05/0 8/20 13		1120140 7107V	10/0 2/20 15	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Singapore
102015 07700V	05/0 8/20 13	10/29 /15	1020150 7700V	08/0 6/20 21	Compositions and Methods for Measuring and Calibrating Amplification Bias in Multiplexed PCR Reactions	Singapore
13/708, 847	12/0 7/20 12	US 2013 - 0253 842 A1	9824179	11/2 1/20 17	Diagnosis of Lymphoid Malignancies and Minimal Residual Disease Detection	United States of America
201234 7460	12/0 7/20 12		2012347 460	09/0 7/20 17	Diagnosis of Lymphoid Malignancies and Minimal Residual Disease Detection	Australia
2,858,0 70	12/0 7/20 12		2858070	07/1 0/20 18	Diagnosis of Lymphoid Malignancies and Minimal Residual Disease Detection	Canada
128560 15.8	12/0 7/20 12	2788 509	2788509	07/1 1/20 18	Diagnosis of Lymphoid Malignancies and Minimal Residual Disease Detection	Switzerland
181738 79.0	12/0 7/20 12	3388 535	3388535	03/2 4/20 21	Diagnosis of Lymphoid Malignancies and Minimal Residual Disease Detection	Switzerland
128560 15.8	12/0 7/20 12	2788 509	2788509	07/1 1/20 18	Diagnosis of Lymphoid Malignancies and Minimal Residual Disease Detection	Germany
181738 79.0	12/0 7/20 12	3388 535	6020120 74952.0	03/2 4/20 21	Diagnosis of Lymphoid Malignancies and Minimal Residual Disease Detection	Germany

Applica tion #	Date File d	Publi catio n Num ber	Patent #	Gra nt Date	Title	Cou ntry Nam e
128560 15.8	12/0 7/20 12	2788 509	2788509	07/1 1/20 18	Diagnosis of Lymphoid Malignancies and Minimal Residual Disease Detection	Euro pean Patent Offic e
181738 79.0	12/0 7/20 12	3388 535	3388535	03/2 4/20 21	Diagnosis of Lymphoid Malignancies and Minimal Residual Disease Detection	Euro pean Patent Offic e
211638 02.8	12/0 7/20 12	3904 536			Diagnosis of Lymphoid Malignancies and Minimal Residual Disease Detection	Euro pean Patent Offic e
128560 15.8	12/0 7/20 12	2788 509	2788509	07/1 1/20 18	Diagnosis of Lymphoid Malignancies and Minimal Residual Disease Detection	Spain
181738 79.0	12/0 7/20 12	3388 535	3388535	03/2 4/20 21	Diagnosis of Lymphoid Malignancies and Minimal Residual Disease Detection	Spain
128560 15.8	12/0 7/20 12	2788 509	2788509	07/1 1/20 18	Diagnosis of Lymphoid Malignancies and Minimal Residual Disease Detection	Franc e
181738 79.0	12/0 7/20 12	3388 535	3388535	03/2 4/20 21	Diagnosis of Lymphoid Malignancies and Minimal Residual Disease Detection	Franc e
128560 15.8	12/0 7/20 12	2788 509	2788509	07/1 1/20 18	Diagnosis of Lymphoid Malignancies and Minimal Residual Disease Detection	Unite d King dom
181738 79.0	12/0 7/20 12	3388 535	3388535	03/2 4/20 21	Diagnosis of Lymphoid Malignancies and Minimal Residual Disease Detection	Unite d King dom
128560 15.8	12/0 7/20 12	2788 509	2788509	07/1 1/20 18	Diagnosis of Lymphoid Malignancies and Minimal Residual Disease Detection	Irela nd
181738 79.0	12/0 7/20 12	3388 535	3388535	03/2 4/20 21	Diagnosis of Lymphoid Malignancies and Minimal Residual Disease Detection	Irela nd
128560 15.8	12/0 7/20 12	2788 509	2788509	07/1 1/20 18	Diagnosis of Lymphoid Malignancies and Minimal Residual Disease Detection	Italy

Applica tion #	Date File d	Publi catio n Num ber	Patent #	Gra nt Date	Title	Cou ntry Nam e
181738 79.0	12/0 7/20 12	3388 535	5020210 0004538 9	03/2 4/20 21	Diagnosis of Lymphoid Malignancies and Minimal Residual Disease Detection	Italy
181738 79.0	12/0 7/20 12	3388 535	3388535	03/2 4/20 21	Diagnosis of Lymphoid Malignancies and Minimal Residual Disease Detection	Neth erlan ds
181738 79.0	12/0 7/20 12	3388 535	3388535	03/2 4/20 21	Diagnosis of Lymphoid Malignancies and Minimal Residual Disease Detection	Norw ay
128560 15.8	12/0 7/20 12	2788 509	2788509	07/1 1/20 18	Diagnosis of Lymphoid Malignancies and Minimal Residual Disease Detection	Swed en
181738 79.0	12/0 7/20 12	3388 535	3388535	03/2 4/20 21	Diagnosis of Lymphoid Malignancies and Minimal Residual Disease Detection	Swed en
201026 3172	06/0 4/20 10		2010263 172	07/1 4/20 16	Method of Measuring Adaptive Immunity	Austr alia
2,765,9 49	06/0 4/20 10		2765949	03/2 9/20 16	Method of Measuring Adaptive Immunity	Can ada
201080 028875. 2	06/0 4/20 10		ZL2010 8002887 5.2	06/0 1/20 16	Method of Measuring Adaptive Immunity	Chin a
15/061, 827	03/0 4/20 16	US 2016 - 0251 721 A1	9809813	11/0 7/20 17	Method of Measuring Adaptive Immunity	Unite d State s of Amer ica
15/709, 719	09/2 0/20 17	US 2018 - 0073 015 A1	1121479 3	01/0 4/20 22	Method of Measuring Adaptive Immunity	Unite d State s of Amer ica
16/023, 010	06/2 9/20 18	US 2018 - 0312 832 A1			Method of Measuring Adaptive Immunity	Unite d State s of Amer ica
107225 12.0	06/0 4/20 10	2446 052	2446052	08/0 8/20 18	Method of Measuring Adaptive Immunity	Germ any
107225 12.0	06/0 4/20 10	2446 052	2446052	08/0 8/20 18	Method of Measuring Adaptive Immunity	Euro pean Paten t

Applica tion #	Date File d	Publi catio n Num ber	Patent #	Gra nt Date	Title	Cou ntry Nam e
						Offic e
181848 43.3	06/0 4/20 10	3409 792			Method of Measuring Adaptive Immunity	Euro pean Patent Offic e
121096 90.0	06/0 4/20 10	1169 147	HK1169 147	09/2 7/20 19	Method of Measuring Adaptive Immunity	Hong Kong
107225 12.0	06/0 4/20 10	2446 052	2446052	08/0 8/20 18	Method of Measuring Adaptive Immunity	Franc e
107225 12.0	06/0 4/20 10	2446 052	2446052	08/0 8/20 18	Method of Measuring Adaptive Immunity	Unite d King dom
217200	06/0 4/20 10		217200	05/3 0/20 16	Method of Measuring Adaptive Immunity Using Multiplicity of V-and J-Segment Primers	Israel
2015- 151866	06/0 4/20 10		6125578	04/1 4/20 17	Method of Measuring Adaptive Immunity	Japan
201210 1828	06/0 4/20 10		2539032	11/2 6/20 14	Method of Measuring Adaptive Immunity	Russi an Feder ation
102014 03451Q	06/0 4/20 10		1020140 3451Q	09/2 5/20 17	Method of Measuring Adaptive Immunity	Singa pore
201327 3987	06/1 4/20 13		2013273 987	11/2 2/20 18	Uniquely Tagged Rearranged Adaptive Immune Receptor Genes in a Complex Gene Set	Austr alia
201423 2314	03/1 7/20 14		2014232 314	08/2 7/20 20	Uniquely Tagged Rearranged Adaptive Immune Receptor Genes in a Complex Gene Set	Austr alia
202021 3348	03/1 7/20 14		2020213 348	09/0 1/20 22	Uniquely Tagged Rearranged Adaptive Immune Receptor Genes in a Complex Gene Set	Austr alia
201480 025490. 9	03/1 7/20 14		ZL2014 8002549 0.9	01/1 1/20 19	Uniquely Tagged Rearranged Adaptive Immune Receptor Genes in a Complex Gene Set	Chin a
147224 74.5	03/1 7/20 14	2971 105	2971105	08/0 1/20 18	Uniquely Tagged Rearranged Adaptive Immune Receptor Genes in a Complex Gene Set	Germ any

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147224 74.5	03/1 7/20 14	2971 105	2971105	08/0 1/20 18	Uniquely Tagged Rearranged Adaptive Immune Receptor Genes in a Complex Gene Set	Euro pean Paten t Offic e
147224 74.5	03/1 7/20 14	2971 105	2971105	08/0 1/20 18	Uniquely Tagged Rearranged Adaptive Immune Receptor Genes in a Complex Gene Set	Franc e
147224 74.5	03/1 7/20 14	2971 105	2971105	08/0 1/20 18	Uniquely Tagged Rearranged Adaptive Immune Receptor Genes in a Complex Gene Set	Unite d King dom
241394	03/1 7/20 14	Journ al No. 12/20 19	241394	04/0 1/20 20	Methods of Identifying Adaptive Immune Receptor Cognate Pairs	Israel
2016- 502574	03/1 7/20 14		6431895	11/0 9/20 18	Uniquely Tagged Rearranged Adaptive Immune Receptor Genes in a Complex Gene Set	Japan
102017 07394P	03/1 7/20 14				Uniquely Tagged Rearranged Adaptive Immune Receptor Genes in a Complex Gene Set	Singa pore
14/777, 294	09/1 5/20 15	US 2016 - 0024 493 A1			Uniquely Tagged Rearranged Adaptive Immune Receptor Genes in a Complex Gene Set	Unite d State s of Amer ica
157587 62.7	03/0 5/20 15	3114 240	3114240	07/2 4/20 19	Methods Using Randomer-Containing Synthetic Molecules	Switz erlan d
157587 62.7	03/0 5/20 15	3114 240	6020150 34342.5	07/2 4/20 19	Methods Using Randomer-Containing Synthetic Molecules	Germ any
16/864, 408	05/0 1/20 20	US 2020 - 0325 526 A1	1124825 3	02/1 5/20 22	Methods Using Randomer-Containing Synthetic Molecules	Unite d State s of Amer ica
157587 62.7	03/0 5/20 15	3114 240	3114240	07/2 4/20 19	Methods Using Randomer-Containing Synthetic Molecules	Euro pean Paten t Offic e

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157587 62.7	03/0 5/20 15	3114 240	3003307 16	07/2 4/20 19	Methods Using Randomer-Containing Synthetic Molecules	Spain
157587 62.7	03/0 5/20 15	3114 240	3114240	07/2 4/20 19	Methods Using Randomer-Containing Synthetic Molecules	Franc e
157587 62.7	03/0 5/20 15	3114 240	3114240	07/2 4/20 19	Methods Using Randomer-Containing Synthetic Molecules	Unite d King dom
157587 62.7	03/0 5/20 15	3114 240	3114240	07/2 4/20 19	Methods Using Randomer-Containing Synthetic Molecules	Irelan d
157587 62.7	03/0 5/20 15	3114 240	5020190 0008777 9	07/2 4/20 19	Methods Using Randomer-Containing Synthetic Molecules	Italy
157587 62.7	03/0 5/20 15	3114 240	3114240	07/2 4/20 19	Methods Using Randomer-Containing Synthetic Molecules	Neth erlan ds
157587 62.7	03/0 5/20 15	3114 240	3114240	07/2 4/20 19	Methods Using Randomer-Containing Synthetic Molecules	Norway
157587 62.7	03/0 5/20 15	3114 240	3114240	07/2 4/20 19	Methods Using Randomer-Containing Synthetic Molecules	Sweden
14/242, 520	04/0 1/20 14		1006626 5	09/0 4/20 18	Determining Antigen-Specific T-Cells	Unite d State s of Amer ica
201524 0749	04/0 1/20 15		2015240 749	09/0 9/20 21	Determining Antigen-Specific T-Cells And B-Cells	Austr alia
2,944,6 53	04/0 1/20 15				Determining Antigen-Specific T-Cells And B-Cells	Can ada
157726 27.4	04/0 1/20 15	3126 522	3126522	02/1 9/20 20	Determining Antigen-Specific T-Cells And B-Cells	Switz erlan d
15/827, 639	11/3 0/20 17	US 2018 - 0087 109 A1	1043574 5	10/0 8/20 19	Determining Antigen-Specific T-Cells	Unite d State s of Amer ica



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17/579, 900	01/2 0/20 22	US 2022 - 0251 653 A1			Determining Antigen-Specific T-Cells	Unite d State s of Amer ica
157726 27.4	04/0 1/20 15	3126 522	6020150 47353.1	02/1 9/20 20	Determining Antigen-Specific T-Cells And B-Cells	Germ any
16/106, 867	08/2 1/20 18	US 2018 - 0355 429 A1	1126149 0	03/0 1/20 22	Determining Antigen-Specific T-Cells	Unite d State s of Amer ica
157726 27.4	04/0 1/20 15	3126 522	3126522	02/1 9/20 20	Determining Antigen-Specific T-Cells And B-Cells	Euro pean Paten t Offic e
201572 20.3	04/0 1/20 15	3674 415			Determining Antigen-Specific T-Cells And B-Cells	Euro pean Paten t Offic e
157726 27.4	04/0 1/20 15	3126 522	3126522	02/1 9/20 20	Determining Antigen-Specific T-Cells And B-Cells	Spain
157726 27.4	04/0 1/20 15	3126 522	3126522	02/1 9/20 20	Determining Antigen-Specific T-Cells And B-Cells	Franc e
157726 27.4	04/0 1/20 15	3126 522	3126522	02/1 9/20 20	Determining Antigen-Specific T-Cells And B-Cells	Unite d King dom
157726 27.4	04/0 1/20 15	3126 522	3126522	02/1 9/20 20	Determining Antigen-Specific T-Cells And B-Cells	Irelan d
157726 27.4	04/0 1/20 15	3126 522	5020200 0004286 5	02/1 9/20 20	Determining Antigen-Specific T-Cells And B-Cells	Italy
157726 27.4	04/0 1/20 15	3126 522	3126522	02/1 9/20 20	Determining Antigen-Specific T-Cells And B-Cells	Neth erlan ds
157726 27.4	04/0 1/20 15	3126 522	3126522	02/1 9/20 20	Determining Antigen-Specific T-Cells And B-Cells	Norw ay

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157726 27.4	04/0 1/20 15	3126 522	3126522	02/1 9/20 20	Determining Antigen-Specific T-Cells And B-Cells	Swed en
14/383, 101	09/0 4/20 14	US 2015 - 0031 043 A1	1007747 8	09/1 8/20 18	Determining Paired Immune Receptor Chains from Frequency Matched Subunits	Unite d State s of Amer ica
137574 82.8	03/0 4/20 13		2823060	02/1 4/20 18	Determining Paired Immune Receptor Chains from Frequency Matched Subunits	Belgi um
137574 82.8	03/0 4/20 13		2823060	02/1 4/20 18	Determining Paired Immune Receptor Chains from Frequency Matched Subunits	Switz erlan d
137574 82.8	03/0 4/20 13		2823060	02/1 4/20 18	Determining Paired Immune Receptor Chains from Frequency Matched Subunits	Germ any
137574 82.8	03/0 4/20 13		2823060	02/1 4/20 18	Determining Paired Immune Receptor Chains from Frequency Matched Subunits	Den mark
137574 82.8	03/0 4/20 13		2823060	02/1 4/20 18	Determining Paired Immune Receptor Chains from Frequency Matched Subunits	Euro pean Patent Office
137574 82.8	03/0 4/20 13		2823060	02/1 4/20 18	Determining Paired Immune Receptor Chains from Frequency Matched Subunits	Spain
137574 82.8	03/0 4/20 13		2823060	02/1 4/20 18	Determining Paired Immune Receptor Chains from Frequency Matched Subunits	Finla nd
137574 82.8	03/0 4/20 13		2823060	02/1 4/20 18	Determining Paired Immune Receptor Chains from Frequency Matched Subunits	Franc e
137574 82.8	03/0 4/20 13		2823060	02/1 4/20 18	Determining Paired Immune Receptor Chains from Frequency Matched Subunits	Unite d King dom
137574 82.8	03/0 4/20 13		2823060	02/1 4/20 18	Determining Paired Immune Receptor Chains from Frequency Matched Subunits	Irelan d
137574 82.8	03/0 4/20 13		5020180 0000955 1	02/1 4/20 18	Determining Paired Immune Receptor Chains from Frequency Matched Subunits	Italy

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2014- 561004	03/0 4/20 13		6302847	03/0 9/20 18	Determining Paired Immune Receptor Chains from Frequency Matched Subunits	Japan
137574 82.8	03/0 4/20 13		2823060	02/1 4/20 18	Determining Paired Immune Receptor Chains from Frequency Matched Subunits	Neth erlan ds
137574 82.8	03/0 4/20 13		2823060	02/1 4/20 18	Determining Paired Immune Receptor Chains from Frequency Matched Subunits	Norway
137574 82.8	03/0 4/20 13		2823060	02/1 4/20 18	Determining Paired Immune Receptor Chains from Frequency Matched Subunits	Swed en
16/197, 629	11/2 1/20 18		1125498 0	02/2 2/20 22	Methods of Profiling Targeted Polynucleotides while Mitigating Sequencing Depth Requirements	Unite d State s of Amer ica
15/710, 390	09/2 0/20 17		1042832 5	10/0 1/20 19	Identification of Antigen-Specific B Cell Receptors	Unite d State s of Amer ica
12/615, 263	11/0 9/20 09	US 2010 - 0151 471 A1	8236503	08/0 7/20 12	Methods of Monitoring Conditions by Sequence Analysis	Unite d State s of Amer ica
200931 1588	11/0 9/20 09		2009311 588	11/1 0/20 16	Methods of Monitoring Conditions by Sequence Analysis	Austr alia
2,742,3 80	11/0 9/20 09		2742380	05/2 9/20 18	Methods of Monitoring Conditions by Sequence Analysis	Can ada
097649 27.1	11/0 9/20 09	2364 368	2364368	01/1 5/20 14	Methods of Monitoring Conditions by Sequence Analysis	Switz erlan d
131953 79.6	11/0 9/20 09	2719 774	2719774	03/1 8/20 20	Methods of Monitoring Conditions by Sequence Analysis	Switz erlan d
200980 153756. 7	11/0 9/20 09		ZL2009 8015375 6.7	11/2 5/20 15	Methods of Monitoring Conditions by Sequence Analysis	Chin a
201410 350386. 9	11/0 9/20 09	1041 9522 7	ZL2014 1035038 6.9	04/1 2/20 17	Methods of Monitoring Conditions by Sequence Analysis	Chin a

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14/987, 165	01/0 4/20 16	US 2016 - 0201 133 A1	1026690 1	04/2 3/20 19	Methods of Monitoring Conditions by Sequence Analysis	Unite d State s of Amer ica
15/820, 655	11/2 2/20 17	US 2018 - 0112 278 A1	1024675 2	04/0 2/20 19	Methods of Monitoring Conditions by Sequence Analysis	Unite d State s of Amer ica
16/222, 052	12/1 7/20 18	US 2019 - 0169 698 A1	1100189 5	05/1 1/20 21	Methods of Monitoring Conditions by Sequence Analysis	Unite d State s of Amer ica
17/232, 961	04/1 6/20 21	US 2021 - 0310 076 A1			Methods of Monitoring Conditions by Sequence Analysis	Unite d State s of Amer ica
13/459, 701	04/3 0/20 12	US 2013 - 0005 584 A1	9217176	12/2 2/20 15	Methods of Monitoring Conditions by Sequence Analysis	Unite d State s of Amer ica
13/468, 323	05/1 0/20 12	US 2013 - 0017 957 A1	8795970	08/0 5/20 14	Methods of Monitoring Conditions by Sequence Analysis	Unite d State s of Amer ica
14/329, 873	07/1 1/20 14	US 2014 - 0342 367 A1	9228232	01/0 5/20 16	Methods of Monitoring Conditions by Sequence Analysis	Unite d State s of Amer ica
097649 27.1	11/0 9/20 09	2364 368	6020090 21463.2	01/1 5/20 14	Methods of Monitoring Conditions by Sequence Analysis	Germ any
131953 79.6	11/0 9/20 09	2719 774	6020090 21463.2	03/1 8/20 20	Methods of Monitoring Conditions by Sequence Analysis	Germ any

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097649 27.1	11/0 9/20 09	2364 368	2364368	01/1 5/20 14	Methods of Monitoring Conditions by Sequence Analysis	Euro pean Patent Offic e
131953 79.6	11/0 9/20 09	2719 774	2719774	03/1 8/20 20	Methods of Monitoring Conditions by Sequence Analysis	Euro pean Patent Offic e
201572 66.6	11/0 9/20 09	3699 296			Methods of Monitoring Conditions by Sequence Analysis	Euro pean Patent Offic e
420210 25820.8	11/0 9/20 09	4003 5877			Methods of Monitoring Conditions by Sequence Analysis	Hong Kong
097649 27.1	11/0 9/20 09	2364 368	2364368	01/1 5/20 14	Methods of Monitoring Conditions by Sequence Analysis	Spain
131953 79.6	11/0 9/20 09	2719 774	3003593 17	03/1 8/20 20	Methods of Monitoring Conditions by Sequence Analysis	Spain
097649 27.1	11/0 9/20 09	2364 368	2364368	01/1 5/20 14	Methods of Monitoring Conditions by Sequence Analysis	Franc e
131953 79.6	11/0 9/20 09	2719 774	2719774	03/1 8/20 20	Methods of Monitoring Conditions by Sequence Analysis	Franc e
100964 1.0	11/0 9/20 09	2467 704	2467704	07/2 6/20 11	A Method for Determining a Profile of Recombined DNA Sequences in T-Cells and/or B-Cells	Unite d King dom
110506 8.9	11/0 9/20 09	2477 439	2477439	01/1 7/20 12	A Method for Determining a Profile of Recombined DNA Sequences in T-Cells and/or B-Cells	Unite d King dom
112020 9.0	11/0 9/20 09	2483 810	2483810	08/0 7/20 12	Methods for Correlating Clonotypes with Diseases in a Population	Unite d King dom
120966 8.1	11/0 9/20 09	2488 700	GB2488 700	05/2 9/20 13	Methods for Monitoring Disease Conditions by Analysis of the Full Repertoire of CDR3 Sequences of an Individual	Unite d King dom

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130053 3.5	11/0 9/20 09	2497 007	2497007	08/0 7/20 13	Methods of Monitoring Disease Conditions by Analysis of the Full Repertoire of the V-D Junction or D-J Junction Sequences of an Individual	Unite d King dom
131953 79.6	11/0 9/20 09	2719 774	2719774	03/1 8/20 20	Methods of Monitoring Conditions by Sequence Analysis	Irela nd
097649 27.1	11/0 9/20 09	2364 368	5020149 0225087 5	01/1 5/20 14	Methods of Monitoring Conditions by Sequence Analysis	Italy
131953 79.6	11/0 9/20 09	2719 774	5020200 0005193 7	03/1 8/20 20	Methods of Monitoring Conditions by Sequence Analysis	Italy
2011- 535569	11/0 9/20 09		5798926	08/2 8/20 15	Methods of Monitoring Conditions by Sequence Analysis	Japan
2015- 164457	11/0 9/20 09		6112577	03/2 4/20 17	Methods of Monitoring Conditions by Sequence Analysis	Japan
097649 27.1	11/0 9/20 09	2364 368	2364368	01/1 5/20 14	Methods of Monitoring Conditions by Sequence Analysis	Neth erlan ds
131953 79.6	11/0 9/20 09	2719 774	2719774	03/1 8/20 20	Methods of Monitoring Conditions by Sequence Analysis	Neth erlan ds
131953 79.6	11/0 9/20 09	2719 774	2719774	03/1 8/20 20	Methods of Monitoring Conditions by Sequence Analysis	Norw ay
097649 27.1	11/0 9/20 09	2364 368	2364368	01/1 5/20 14	Methods of Monitoring Conditions by Sequence Analysis	Swed en
131953 79.6	11/0 9/20 09	2719 774	2719774	03/1 8/20 20	Methods of Monitoring Conditions by Sequence Analysis	Swed en
201103 151-5	11/0 9/20 09		170609	12/1 6/20 13	Methods of Monitoring Conditions by Sequence Analysis	Singa pore
201308 253-2	11/0 9/20 09		2013082 53-2	05/3 1/20 17	Methods of Monitoring Conditions by Sequence Analysis	Singa pore
117777 04.5	05/0 4/20 11	2567 226	2567226	08/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Austr ia
201124 9041	05/0 4/20 11		2011249 041	02/1 2/20 15	Monitoring Health and Disease Status Using Clonotype Profiles	Austr alia

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117777 04.5	05/0 4/20 11	2567 226	2567226	08/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Belgi um
2,798,4 31	05/0 4/20 11		2798431	10/2 3/20 18	Monitoring Health and Disease Status Using Clonotype Profiles	Cana da
117777 04.5	05/0 4/20 11	2567 226	2567226	08/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Switz erlan d
161834 02.3	05/0 4/20 11	3144 673	3144673	07/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Switz erlan d
13/100, 365	05/0 4/20 11	US 2011 - 0207 134 A1	8748103	06/1 0/20 14	Monitoring Health And Disease Status Using Clonotype Profiles	Unite d State s of Amer ica
201180 033142. 2	05/0 4/20 11		ZL2011 8003314 2.2	03/0 9/20 16	Monitoring Health and Disease Status Using Clonotype Profiles	Chin a
13/763, 978	02/1 1/20 13	US 2013 - 0136 799 A1	8628927	01/1 4/20 14	Monitoring Health and Disease Status Using Clonotype Profiles	Unite d State s of Amer ica
14/075, 075	11/0 8/20 13	US 2014 - 0235 454 A1	9416420	08/1 6/20 16	Monitoring Health and Disease Status Using Clonotype Profiles	Unite d State s of Amer ica
14/176, 551	02/1 0/20 14	US 2015 - 0065 352 A1	9512487	12/0 6/20 16	Monitoring Health and Disease Status Using Clonotype Profiles	Unite d State s of Amer ica
15/061, 750	03/0 4/20 16	US 2016 - 0251 728 A1	1015599 2	12/1 8/20 18	Monitoring Health and Disease Status Using Clonotype Profiles	Unite d State s of Amer ica
15/618, 732	06/0 9/20 17	US 2017 - 0349	1051951 1	12/3 1/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Unite d State s of

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		954 A1				Amer ica
15/827, 759	11/3 0/20 17	US 2018 - 0080 090 A1	1076013 3	09/0 1/20 20	Monitoring Health and Disease Status Using Clonotype Profiles	Unite d State s of Amer ica
16/121, 995	09/0 5/20 18	US 2019 - 0062 848 A1	1086545 3	12/1 5/20 20	Monitoring Health and Disease Status Using Clonotype Profiles	Unite d State s of Amer ica
16/218, 535	12/1 3/20 18	US 2019 - 0100 810 A1	1102175 7	06/0 1/20 21	Monitoring Health and Disease Status Using Clonotype Profiles	Unite d State s of Amer ica
17/316, 148	05/1 0/20 21	US 2022 - 0127 675 A1			Monitoring Health and Disease Status Using Clonotype Profiles	Unite d State s of Amer ica
117777 04.5	05/0 4/20 11	2567 226	6020110 29090.8	08/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Germ any
161834 02.3	05/0 4/20 11	3144 673	6020110 60432.5	07/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Germ any
117777 04.5	05/0 4/20 11	2567 226	2567226	08/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Den mark
161834 02.3	05/0 4/20 11	3144 673	3144673	07/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Den mark
117777 04.5	05/0 4/20 11	2567 226	2567226	08/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Euro pean Paten t Offic e
161834 02.3	05/0 4/20 11	3144 673	3144673	07/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Euro pean Paten t



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						Offic e
182011 37.9	05/0 4/20 11	3456 847			Monitoring Solid Transplant Rejection Using Clonotype Profiles	Euro pean Patent Offic e
117777 04.5	05/0 4/20 11	2567 226	2567226	08/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Spain
161834 02.3	05/0 4/20 11	3144 673	3144673	07/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Spain
117777 04.5	05/0 4/20 11	2567 226	2567226	08/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Finla nd
117777 04.5	05/0 4/20 11	2567 226	2567226	08/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Franc e
161834 02.3	05/0 4/20 11	3144 673	3144673	07/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Franc e
117777 04.5	05/0 4/20 11	2567 226	2567226	08/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Unite d King dom
161834 02.3	05/0 4/20 11	3144 673	3144673	07/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Unite d King dom
117777 04.5	05/0 4/20 11	2567 226	2567226	08/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Irela nd
161834 02.3	05/0 4/20 11	3144 673	3144673	07/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Irela nd
117777 04.5	05/0 4/20 11	2567 226	2567226	08/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Icela nd
117777 04.5	05/0 4/20 11	2567 226	5020160 0011097 0	08/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Italy
161834 02.3	05/0 4/20 11	3144 673	5020190 0008213 0	07/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Italy

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2013- 509046	05/0 4/20 11		6158080	06/1 6/20 17	Monitoring Health and Disease Status Using Clonotype Profiles	Japan
2017- 112502	05/0 4/20 11		6246971	11/2 4/20 17	Monitoring Health and Disease Status Using Clonotype Profiles	Japan
2017- 219812	05/0 4/20 11		6533272	05/3 1/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Japan
117777 04.5	05/0 4/20 11	2567 226	2567226	08/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Luxe mbou rg
117777 04.5	05/0 4/20 11	2567 226	2567226	08/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Neth erlan ds
161834 02.3	05/0 4/20 11	3144 673	3144673	07/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Neth erlan ds
117777 04.5	05/0 4/20 11	2567 226	2567226	08/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Norw ay
161834 02.3	05/0 4/20 11	3144 673	3144673	07/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Norw ay
117777 04.5	05/0 4/20 11	2567 226	2567226	08/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Swed en
161834 02.3	05/0 4/20 11	3144 673	3144673	07/1 0/20 19	Monitoring Health and Disease Status Using Clonotype Profiles	Swed en
201208 152-7	05/0 4/20 11	1851 28	185128	05/1 5/20 15	Monitoring Health and Disease Status Using Clonotype Profiles	Singa pore
13/859, 210	04/0 9/20 13	US 2013 - 0302 801 A1	9394567	07/1 9/20 16	Methods of Sequence Determination Using Sequence Tags	Unite d State s of Amer ica
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148196 80.1	06/3 0/20 14	3017 066	3017066	01/0 2/20 19	Large-Scale Biomolecular Analysis With Sequence Tags	Switz erlan d
182111 68.2	06/3 0/20 14	3486 327	3486327	07/2 2/20 20	Large-Scale Biomolecular Analysis With Sequence Tags	Switz erlan d
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148196 80.1	06/3 0/20 14	3017 066	3017066	01/0 2/20 19	Large-Scale Biomolecular Analysis With Sequence Tags	Germ any
182111 68.2	06/3 0/20 14	3486 327	6020140 68197.2	07/2 2/20 20	Large-Scale Biomolecular Analysis With Sequence Tags	Germ any

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182111 68.2	06/3 0/20 14	3486 327	3486327	07/2 2/20 20	Large-Scale Biomolecular Analysis With Sequence Tags	Euro pean Patent Offic e
161123 20.8	06/3 0/20 14	1223 987			Large-Scale Biomolecular Analysis With Sequence Tags	Hong Kong
148196 80.1	06/3 0/20 14	3017 066	3017066	01/0 2/20 19	Large-Scale Biomolecular Analysis With Sequence Tags	Spain
182111 68.2	06/3 0/20 14	3486 327	3486327	07/2 2/20 20	Large-Scale Biomolecular Analysis With Sequence Tags	Spain
148196 80.1	06/3 0/20 14	3017 066	3017066	01/0 2/20 19	Large-Scale Biomolecular Analysis With Sequence Tags	Franc e
182111 68.2	06/3 0/20 14	3486 327	3486327	07/2 2/20 20	Large-Scale Biomolecular Analysis With Sequence Tags	Franc e
148196 80.1	06/3 0/20 14	3017 066	3017066	01/0 2/20 19	Large-Scale Biomolecular Analysis With Sequence Tags	Unite d King dom
182111 68.2	06/3 0/20 14	3486 327	3486327	07/2 2/20 20	Large-Scale Biomolecular Analysis With Sequence Tags	Unite d King dom
148196 80.1	06/3 0/20 14	3017 066	3017066	01/0 2/20 19	Large-Scale Biomolecular Analysis With Sequence Tags	Irela nd
182111 68.2	06/3 0/20 14	3486 327	3486327	07/2 2/20 20	Large-Scale Biomolecular Analysis With Sequence Tags	Irela nd
148196 80.1	06/3 0/20 14	3017 066	3017066	01/0 2/20 19	Large-Scale Biomolecular Analysis With Sequence Tags	Italy
182111 68.2	06/3 0/20 14	3486 327	5020200 0009629 5	07/2 2/20 20	Large-Scale Biomolecular Analysis With Sequence Tags	Italy

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148196 80.1	06/3 0/20 14	3017 066	3017066	01/0 2/20 19	Large-Scale Biomolecular Analysis With Sequence Tags	Neth erlan ds
182111 68.2	06/3 0/20 14	3486 327	3486327	07/2 2/20 20	Large-Scale Biomolecular Analysis With Sequence Tags	Neth erlan ds
148196 80.1	06/3 0/20 14	3017 066	3017066	01/0 2/20 19	Large-Scale Biomolecular Analysis With Sequence Tags	Norw ay
182111 68.2	06/3 0/20 14	3486 327	3486327	07/2 2/20 20	Large-Scale Biomolecular Analysis With Sequence Tags	Norw ay
148196 80.1	06/3 0/20 14	3017 066	3017066	01/0 2/20 19	Large-Scale Biomolecular Analysis With Sequence Tags	Swed en
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