

PATENT ASSIGNMENT COVER SHEET

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 Stylesheet Version v1.2

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SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	ASSIGNMENT	
CONVEYING PARTY DATA		
	Name	Execution Date
	SEQUENTA, LLC	01/19/2016
RECEIVING PARTY DATA		
Name:	ADAPTIVE BIOTECHNOLOGIES CORP.	
Street Address:	1551 EASTLAKE AVENUE E., SUITE 200	
City:	SEATTLE	
State/Country:	WASHINGTON	
Postal Code:	98102	
PROPERTY NUMBERS Total: 1		
	Property Type	Number
	Application Number:	16106867
CORRESPONDENCE DATA		
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<i>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.</i>		
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ATTORNEY DOCKET NUMBER:	ADBS-026/02US 323310-2580	
NAME OF SUBMITTER:	JORDAN D. PHELAN	
SIGNATURE:	/Jordan D. Phelan/	
DATE SIGNED:	08/21/2018	
Total Attachments: 15		
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ASSIGNMENT OF PATENT RIGHTS**(Company to Company)**

Sequentia, LLC, a corporation having its principal place of business at 1551 Eastlake Ave E., Suite 200, Seattle, Washington 98102 (herein referred to as "Assignor") owns the entire right, title and interest in any Letters Patent(s) ("said patent(s)") and any Patent application(s) ("said application(s)") set forth below, as well as any invention(s) ("said invention(s)") disclosed in said application(s) and said patent(s).

Letters Patent(s)

Patent No.: Schedule A Issue Date: Schedule A

Assignment Recordation Date: Schedule A Reel/Frame No.: Schedule A

Title: Schedule A

Patent Application(s)

Application Serial No.: Schedule A File Date: Schedule A

Assignment Recordation Date: Schedule A Reel/Frame No.: Schedule A

Title: Schedule A

PCT Patent Application(s)

Application Serial No.: Schedule A File Date: Schedule A

Assignment Recordation Date: Schedule A Reel/Frame No.: Schedule A

Title: Schedule A

WHEREAS, **Adaptive Biotechnologies Corp.**, a corporation having its principal place of business at 1551 Eastlake Ave E., Suite 200, Seattle, Washington 98102 its successors, legal representatives and assigns (the "Assignee"), is desirous of acquiring the entire right, title, and interest in and to said invention(s), said application(s), and said patent(s), the right to file applications on said invention(s), the entire right, title and interest in and to any applications for Letters Patent of the United States or other countries claiming priority to said application(s), the right to recover any and all past, present, and future damages, including provisional or other royalties, for any and all past, present, and future infringements of said application(s) and said patent(s), and the entire right, title, and interest in and to any and all Letters Patent or Patents, United States or foreign, to be obtained for said invention(s) and said application(s);

NOW, THEREFORE, for good and sufficient consideration, the receipt of which is hereby acknowledged, the Assignor has sold, assigned, transferred, and set over, and by these presents does sell, assign, transfer, and set over, unto the Assignee, its successors, legal representatives, and assigns the entire right, title, and interest in and to said invention(s), said application(s), and said patent(s), the right to file applications on said invention(s), the entire right, title and interest in and to any applications for Letters Patent of the United States or other countries claiming priority to said application(s), including divisions, continuations, and continuations-in-part of said application(s), the right to recover any and all past, present, and future damages, including provisional or other royalties, for any and all past, present, and future infringements of said application(s) and said patent(s), the entire right, title and interest in and to any and all Letters Patent or Patents, United States or foreign, to be obtained for said invention(s) and said application(s), the entire right, title and interest in and to any and all reissues and extensions of said patent(s), and all rights under the Hague Convention, the Paris Convention for the Protection of Industrial Property, and under the Patent Cooperation Treaty, the same to be held and enjoyed by the Assignee, for its own use and behalf and the use and behalf of its successors, legal representatives, and assigns, to the full end of the term or terms for which Letters Patent or Patents may be granted as fully and entirely as the same would have been held and enjoyed by the Assignor had this sale and assignment not been made;

AND for the same consideration, the Assignor hereby covenants and agrees to and with the Assignee, its successors, legal representatives, and assigns, that, at the time of execution and delivery of these presents, the Assignor is the sole and lawful owner of the entire right, title, and interest in and to said invention(s), said application(s), and said patent(s), and that the same are unencumbered, and that the Assignor has good and full right and lawful authority to sell and convey the same in the manner herein set forth;

AND for the same consideration, the Assignor hereby covenants and agrees to and with the Assignee, its successors, legal representatives, and assigns that the Assignor will, whenever counsel of the Assignee, or the counsel of its successors, legal representatives, and assigns, shall advise that any proceeding in connection with said invention(s), said application(s), said patent(s), any application claiming priority to said application(s), any reissue or extension of said patent(s), and any United States or foreign Letters Patent or Patents for said invention(s) or said application(s), including interference and derivation proceedings, and any post-grant proceedings (e.g., opposition proceedings, post-grant reviews, *Inter partes* reviews, supplemental examinations, etc.), is lawful and desirable, sign all papers and documents, take all lawful oaths, and do all acts necessary or required to be done for the procurement, maintenance, enforcement and defense of Letters Patent or Patents for said invention(s), without charge to the Assignee, its successors, legal representatives, and assigns, but at the cost and expense of the Assignee, its successors, legal representatives, and assigns;

AND the Assignor hereby requests the Commissioner of Patents to issue any and all aforementioned patent(s) of the United States to the Assignee, as the Assignee of said invention(s) and the Letters Patent to be issued thereon for the sole use and behalf of the Assignee, its successors, legal representatives, and assigns.

Date: 1/15/16

By: [Signature]

Name:

Title:

Company: Sequenta, LLC

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of WA)
) ss.

County of King

On 1/12/18, before me, Lorna Chang
Notary Public, personally appeared Chad Polins

who proved to me on the basis of satisfactory evidence, to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

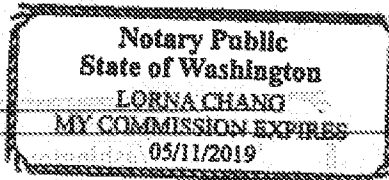
REQUIRED SENTENCE IF NOTARIZED IN CALIFORNIA: I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature of Notary Public

Place Notary Seal Above

My Commission Expires: _____



Date: 1/19/16

By: [Signature]

Name: Chad Robins

Title: CEO

Company: Adaptive Biotechnologies Corp.

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of WA)
) ss.

County of King)

On 1/19/16, before me, Lorna Chang,

Notary Public, personally appeared Chad Robins,

who proved to me on the basis of satisfactory evidence, to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

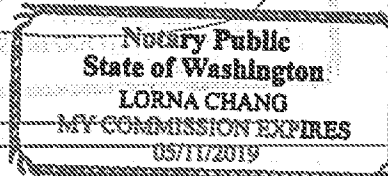
REQUIRED SENTENCE IF NOTARIZED IN CALIFORNIA: I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature of Notary Public

Place Notary Seal Above

My Commission Expires: _____



**Schedule A
US Applications**

Coolley Docket Number	Title	Application No.	Application Date	Reel/Frame Assignment	Date	Reel/Frame - Merger	Date
ADBS-026/00US	DETERMINING ANTIGEN-SPECIFIC T-CELLS	14/242,520	4/1/2014	033328/0585	7/16/2014	037420/0475	1/6/2016
ADBS-027/00US	DETECTION AND MEASUREMENT OF TISSUE-INFILTRATING LYMPHOCYTES	61/570,192	12/13/2011	027586/0912	1/24/2012	037420/0475	1/6/2016
ADBS-027/01US	DETECTION AND MEASUREMENT OF TISSUE-INFILTRATING LYMPHOCYTES	13/688,414	11/29/2012	029893/0759	1/25/2013	037420/0475	1/6/2016
ADBS-028/00US	DETERMINING PAIRED IMMUNE RECEPTOR CHAINS FROM FREQUENCY MATCHED SUBUNITS	61/606,617	3/5/2012	029888/0339	2/27/2013	037420/0475	1/6/2016
ADBS-028/01US	DETERMINING PAIRED IMMUNE RECEPTOR CHAINS FROM FREQUENCY MATCHED SUBUNITS	14/383,101	3/4/2013	032174/0851 032171/0861	2/7/2014 2/7/2014	037401/0224	1/4/2016
ADBS-029/00US	MONITORING IMMUNE RESPONSIVENESS TO CANCER VACCINATION	61/606,653	3/5/2012	029888/0382	2/27/2013	037420/0475	1/6/2016
ADBS-029/01US	MONITORING IMMUNE RESPONSIVENESS TO CANCER VACCINATION	14/383,102	3/5/2013	032172/0017	2/7/2014	037401/0224	1/4/2016
ADBS-030/00US	CANCER VACCINATION WITH ANTIGEN EVOLUTION	61/858,839	7/26/2013	033373/0204 033772/0099	7/23/2014 9/18/2014	037420/0475	1/6/2016
ADBS-034/00US	RARE CLONOTYPES AND USES THEREOF	61/768,269	2/22/2013	030031/0824	3/18/2013	036503/0732	8/28/2015
ADBS-034/01US	RARE CLONOTYPES AND USES THEREOF	13/834,794	3/15/2013	030031/0824	3/18/2013	036503/0732	8/28/2015
ADBS-034/02US	RARE CLONOTYPES AND USES THEREOF	14/185,846	2/20/2014	034556/0709	12/19/2014	036503/0732	8/28/2015
ADBS-035/00US	METHODS OF MONITORING AUTOIMMUNE DISORDERS BY SEQUENCE ANALYSIS	61/112,693	11/7/2008	022047/0139 027616/0326	12/31/2008 1/30/2012	036503/0732	8/28/2015
ADBS-035/02US	METHODS OF MONITORING CONDITIONS BY SEQUENCE ANALYSIS	12/945,678	11/12/2010	022047/0139 027616/0326	12/31/2008 1/30/2012	036503/0732	8/28/2015

Coolley Docket Number	Title	Application No.	Application Date	Reel/Frame Assignment	Date	Reel/Frame - Merger	Date
ADBS-035/03US	METHODS OF MONITORING CONDITIONS BY SEQUENCE ANALYSIS	13/174,086	6/30/2011	022047/0139 027616/0326	12/31/2008 1/30/2012	036503/0732	8/28/2015
ADBS-035/04US	METHODS OF MONITORING CONDITIONS BY SEQUENCE ANALYSIS	13/214,111	8/19/2011	027616/0326	1/30/2012	036503/0732	8/28/2015
ADBS-035/05US	METHODS OF MONITORING CONDITIONS BY SEQUENCE ANALYSIS	13/369,031	2/8/2012	022047/0139 027616/0326	12/31/2008 1/30/2012	036503/0732	8/28/2015
ADBS-035/08US	METHODS OF MONITORING CONDITIONS BY SEQUENCE ANALYSIS	13/627,497	9/26/2012	022047/0139 027616/0326	12/31/2008 01/30/2012	036503/0732	8/28/2015
ADBS-035/09US	METHODS OF MONITORING CONDITIONS BY SEQUENCE ANALYSIS	13/905,406	5/30/2013	034558/0047	12/19/2014	036503/0732	8/28/2015
ADBS-036/00US	METHODS OF MONITORING CONDITIONS BY SEQUENCE ANALYSIS	61/332,175	5/6/2010	029694/0628	1/25/2013	036503/0732	8/28/2015
ADBS-036/01US	METHODS FOR IDENTIFYING AND USING IMMUNE REPERTOIRES	61/455,743	10/25/2010	029694/0505	1/25/2013	036503/0732	8/28/2015
ADBS-036/02US	METHODS OF MONITORING CONDITIONS BY SEQUENCE ANALYSIS	61/446,822	2/25/2011	026031/0289	3/28/2011	036503/0732	8/28/2015
ADBS-036/05US	MONITORING HEALTH AND DISEASE STATUS USING CLONOTYPE PROFILES	14/075,075	11/8/2013	032171/0737	2/7/2014	036503/0732	8/28/2015
ADBS-036/06US	MONITORING HEALTH AND DISEASE STATUS USING CLONOTYPE PROFILES	14/176,551	2/10/2014	034560/0447	12/19/2014	036503/0732	8/28/2015
ADBS-038/04US	SEQUENCE ANALYSIS OF COMPLEX AMPLICONS	14/173,712	2/5/2014	034560/0581	12/19/2014	036503/0732	8/28/2015
ADBS-039/02US	SINGLE CELL ANALYSIS BY POLYMERASE CYCLING ASSEMBLY	61/452,594	3/14/2011	026031/0200	3/28/2011	036503/0732	8/28/2015
ADBS-039/04US	SINGLE CELL ANALYSIS BY POLYMERASE CYCLING ASSEMBLY	13/908,813	6/3/2013	034560/0491	12/19/2014	036503/0732	8/28/2015
ADBS-040/00US	METHOD OF MEASURING IMMUNE ACTIVATION	61/568,850	12/9/2011	027616/0422	1/30/2012	036503/0732	8/28/2015
ADBS-040/01US	METHOD OF MEASURING IMMUNE ACTIVATION	14/363,956	12/7/2012	029881/0013	2/26/2013	036503/0732	8/28/2015

Coolay Docket Number	Title	Application No.	Application Date	Reel/Frame Assignment	Date	Reel/Frame - Merger	Date
ADBS-041/00US	DETECTING DISEASE-CORRELATED CLONOTYPES FROM FIXED SAMPLES	61/494,824	6/8/2011	030031/0941	3/18/2013	036503/0732	8/28/2015
ADBS-041/01US	DETECTING DISEASE-CORRELATED CLONOTYPES FROM FIXED SAMPLES	13/487,980	6/4/2012	030031/0941	3/18/2013	036503/0732	8/28/2015
ADBS-042/05US	METHOD OF DETERMINING CLONOTYPES AND CLONOTYPE PROFILES	14/611,878	2/2/2015	026696/0222	8/3/2011	036503/0732	8/28/2015
ADBS-043/00US	SEQUENCE-BASED MEASURES OF IMMUNE RESPONSE	61/532,777	9/9/2011	027616/0588	1/30/2012	036503/0732	8/28/2015
ADBS-043/01US	SEQUENCE-BASED MEASURES OF IMMUNE RESPONSE	14/343,286	8/31/2012	029887/0762	2/27/2013	036503/0732	8/28/2015
ADBS-044/00US	RANDOM ARRAY SEQUENCING OF LOW-COMPLEXITY LIBRARIES	61/533,511	9/12/2011	027685/0229 030032/0412	2/10/2012 03/18/2013	036503/0732	8/28/2015
ADBS-044/01US	RANDOM ARRAY SEQUENCING OF LOW-COMPLEXITY LIBRARIES	61/568,804	12/9/2011	027685/0229 030032/0412	2/10/2012 03/18/2013	036503/0732	8/28/2015
ADBS-044/02US	RANDOM ARRAY SEQUENCING OF LOW-COMPLEXITY LIBRARIES	13/596,581	8/28/2012	030032/0412	3/18/2013	036503/0732	8/28/2015
ADBS-045/00US	DETERMINING RESPONSIVENESS OF AUTOIMMUNE PATIENTS TO DMARD TREATMENT	61/545,850	10/11/2011	027616/0309	1/30/2012	036503/0732	8/28/2015
ADBS-045/01US	DETERMINING RESPONSIVENESS OF AUTOIMMUNE PATIENTS TO DMARD TREATMENT	14/350,516	10/5/2012	029887/0816	2/27/2013	036503/0732	8/28/2015
ADBS-046/00US	T-CELL RECEPTOR CLONOTYPE SHARING AMONG ANKYLOSING SPONDYLITIS PATIENTS	61/556,125	11/4/2011	027685/0330	2/10/2012	036503/0732	8/28/2015
ADBS-046/01US	T-CELL RECEPTOR CLONOTYPE SHARING AMONG ANKYLOSING SPONDYLITIS PATIENTS	61/561,234	11/17/2011	027685/0330	2/10/2012	036503/0732	8/28/2015
ADBS-046/02US	T-CELL RECEPTOR CLONOTYPES SHARED AMONG ANKYLOSING SPONDYLITIS PATIENTS	14/350,785	10/25/2012	029888/0038	2/27/2013	036503/0732	8/28/2015
ADBS-047/00US	CLONOTYPES AS BIOMETRIC SPECIMEN TAGS	61/567,066	12/5/2011	027586/0835	1/24/2012	036503/0732	8/28/2015

Coolley Docket Number	Title	Application No.	Application Date	Reel/Frame Assignment	- Date	Reel/Frame - Merger	Date
ADBS-047/01US	CLONOTYPES AS BIOMETRIC SPECIMEN TAGS	61/568,813	12/9/2011	027586/0635	1/24/2012	036503/0732	8/28/2015
ADBS-047/02US	CLONOTYPES AS BIOMETRIC SPECIMEN TAGS	14/363,276	12/3/2012	036911/0974	10/29/2015	037401/0224	1/4/2016
ADBS-048/00US	METHOD OF MEASURING IMMUNE ACTIVATION	61/570,187	12/13/2011	027616/0364	1/30/2012	036503/0732	8/28/2015
ADBS-048/01US	METHOD OF MEASURING IMMUNE ACTIVATION	14/364,961	12/12/2012	029888/0234	02/27/203	036503/0732	8/28/2015
ADBS-049/00US	MONITORING TRANSFORMATION OF FOLLICULAR LYMPHOMA TO DIFFUSE LARGE B-CELL LYMPHOMA BY IMMUNE REPERTOIRE ANALYSIS	61/578,175	12/20/2011	029693/0950	1/25/2013	036503/0732	8/28/2015
ADBS-049/01US	MONITORING TRANSFORMATION OF FOLLICULAR LYMPHOMA TO DIFFUSE LARGE B-CELL LYMPHOMA BY IMMUNE REPERTOIRE ANALYSIS	14/368,840	12/19/2012	029693/0950	1/25/2013	036503/0732	8/28/2015
ADBS-050/00US	DETECTION AND QUANTIFICATION OF SAMPLE CONTAMINATION IN IMMUNE REPERTOIRE ANALYSIS	61/624,002	4/13/2012	029894/0397	1/25/2013	036503/0732	8/28/2015
ADBS-050/05US	DETECTION AND QUANTIFICATION OF SAMPLE CONTAMINATION IN IMMUNE REPERTOIRE ANALYSIS	13/859,210	4/9/2013	030328/0246	5/1/2013	036503/0732	8/28/2015
ADBS-051/00US	DIAGNOSING AND MONITORING IMMUNOGLOBULIN HEAVY CHAIN EVOLUTION IN CHILDHOOD ACUTE LYMPHOBLASTIC LEUKEMIA	61/636,518	4/20/2012	029888/0442	2/27/2013	036503/0732	8/28/2015
ADBS-051/01US	DIAGNOSING AND MONITORING IMMUNOGLOBULIN HEAVY CHAIN EVOLUTION IN CHILDHOOD ACUTE LYMPHOBLASTIC LEUKEMIA	61/655,390	6/4/2012	029888/0442	2/27/2013	036503/0732	8/28/2015
ADBS-051/08US	MONITORING IMMUNOGLOBULIN HEAVY CHAIN EVOLUTION IN B-CELL ACUTE LYMPHOBLASTIC LEUKEMIA	13/861,941	4/12/2013	030328/0492	5/1/2013	036503/0732	8/28/2015

Coolay Docket Number	Title	Application No.	Application Date	Reel/Frame Assignment	Date	Reel/Frame - Merger	Date
ADBS-052/00US	PREDICTING RELAPSE OF CHRONIC LYMPHOCYTIC LEUKEMIA PATIENTS TREATED BY ALLOGENEIC STEM CELL TRANSPLANTATION	61/654,008	5/31/2012	029906/0130	3/1/2013	036503/0732	8/28/2015
ADBS-052/01US	PREDICTING RELAPSE OF CHRONIC LYMPHOCYTIC LEUKEMIA PATIENTS TREATED BY ALLOGENEIC STEM CELL TRANSPLANTATION	14/404,435	5/30/2013	033328/0538	7/16/2014	036503/0732	8/28/2015
ADBS-053/00US	HIGH SENSITIVITY MUTATION DETECTION USING SEQUENCE TAGS	61/682,113	8/10/2012	032174/0984	2/7/2014	036503/0732	8/28/2015
ADBS-053/01US	HIGH SENSITIVITY MUTATION DETECTION USING SEQUENCE TAGS	14/420,823	8/8/2013	032174/0984	2/7/2014	036503/0732	8/28/2015
ADBS-054/00US	METHOD OF DETERMINING CLONOTYPES USING SEQUENCE TAGS	61/658,317	6/11/2012	029906/0347	3/1/2013	036503/0732	8/28/2015
ADBS-054/01US	METHOD OF SEQUENCE DETERMINATION USING SEQUENCE TAGS	61/738,277	12/17/2012	029906/0347	3/1/2013	036503/0732	8/28/2015
ADBS-054/10US	METHOD OF SEQUENCE DETERMINATION USING SEQUENCE TAGS	13/835,093	3/15/2013	030588/0528	6/11/2013	036503/0732	8/28/2015
ADBS-055/00US	SINGLE CELL ANALYSIS USING SEQUENCE TAGS	61/675,254	7/24/2012	034521/0513	12/16/2014	036503/0732	8/28/2015
ADBS-055/01US	SINGLE CELL ANALYSIS USING SEQUENCE TAGS	14/425,036	7/22/2013	034521/0513	12/16/2014	036503/0732	8/28/2015
ADBS-057/00US	MONITORING MULTIPLE MYELOMA CLONOTYPES IN PERIPHERAL BLOOD	61/716,251	10/19/2013	034521/0538	12/16/2014	036503/0732	8/28/2015
ADBS-057/01US	MONITORING CLONOTYPES OF PLASMA CELL PROLIFERATIVE DISORDERS IN PERIPHERAL BLOOD	61/866,472	8/15/2013	034521/0538	12/16/2014	036503/0732	8/28/2015
ADBS-057/02US	MONITORING CLONOTYPES OF PLASMA CELL PROLIFERATIVE DISORDERS IN PERIPHERAL BLOOD	61/873,063	9/3/2013	034521/0538	12/16/2014	036503/0732	8/28/2015

Coolley Docket Number	Title	Application No.	Application Date	Reel/Frame Assignment	Date	Reel/Frame - Merger	Date
ADBS-057/03US	MONITORING CLONOTYPES OF PLASMA CELL PROLIFERATIVE DISORDERS IN PERIPHERAL BLOOD	14/436,851	10/17/2013	034521/0538	12/16/2014	036503/0732	8/28/2015
ADBS-058/00US	MONITORING MANTLE CELL LYMPHOMA CLONOTYPES IN PERIPHERAL BLOOD AFTER IMMUNOTRANSPLANT	61/716,995	10/22/2012	034521/0584	12/16/2014	036503/0732	8/28/2015
ADBS-058/01US	MONITORING MANTLE CELL LYMPHOMA CLONOTYPES IN PERIPHERAL BLOOD AFTER IMMUNOTRANSPLANT	14/437,470	10/18/2013	034521/0584	12/16/2014	036503/0732	8/28/2015
ADBS-059/00US	MONITORING DIFFUSE LARGE B-CELL LYMPHOMA CLONOTYPES IN PERIPHERAL BLOOD	61/716,270	10/19/2012	034521/0565	12/16/2014	036503/0732	8/28/2015
ADBS-059/01US	MONITORING DIFFUSE LARGE B-CELL LYMPHOMA FROM PERIPHERAL BLOOD SAMPLES	14/438,855	10/17/2013	034521/0565	12/16/2014	036503/0732	8/28/2015
ADBS-060/00US	MOSAIC TAGS FOR LABELING TEMPLATES IN LARGE-SCALE AMPLIFICATIONS	61/776,647	3/11/2013	032115/0072	2/2/2014	036503/0732	8/28/2015
ADBS-060/01US	MOSAIC TAGS FOR LABELING TEMPLATES IN LARGE-SCALE AMPLIFICATIONS	61/829,054	5/30/2013	032115/0072	2/2/2014	036503/0732	8/28/2015
ADBS-060/02US	MOSAIC TAGS FOR LABELING TEMPLATES IN LARGE-SCALE AMPLIFICATIONS	14/202,990	3/10/2014	033595/0748 033603/0678	8/22/2014 08/25/2014	036503/0732	8/28/2015
ADBS-061/00US	MONITORING TREATMENT-RESISTANT CLONES IN LYMPHOID AND MYELOID NEOPLASMS BY RELATIVE LEVELS OF EVOLVED CLONOTYPES	61/775,278	3/8/2013	032115/0076	2/2/2014	036503/0732	8/28/2015
ADBS-061/01US	MONITORING TREATMENT-RESISTANT CLONES IN LYMPHOID AND MYELOID NEOPLASMS BY RELATIVE LEVELS OF EVOLVED CLONOTYPES	14/197,615	3/5/2014	036915/0078	10/29/2015	036503/0732	8/28/2015

Coolay Docket Number	Title	Application No.	Application Date	Reel/Frame Assignment	Date	Reel/Frame - Merger	Date
ADBS-062/00US	LARGE-SCALE IMMUNE REPERTOIRE ANALYSIS WITH SEQUENCE TAGS	61/841,878	7/1/2013	032969/0894 033772/0218	5/27/2014 09/18/2014	036503/0732	8/28/2015
ADBS-062/01US	LARGE-SCALE BIOMOLECULAR ANALYSIS WITH SEQUENCE TAGS	62/001,580	5/21/2014	032969/0894 033772/0218	5/27/2014 09/18/2014	036503/0732	8/28/2015
ADBS-062/02US	LARGE-SCALE BIOMOLECULAR ANALYSIS WITH SEQUENCE TAGS	14/317,087	6/27/2014	03372/0218	9/18/2014	036503/0732	8/28/2015

**Schedule A
US Patents**

Cooley Docket Number	Title	Patent No.	Issue Date	Reel/Frame - Assignment	Date	Reel/Frame - Merger	Date
ADBS-035/01US	METHODS OF MONITORING CONDITIONS BY SEQUENCE ANALYSIS	8,236,503	08/27/2012	023633/0718 027941/0705	12/10/2009 03/27/2012	027941/0737 036503/0732	3/27/2012 08/28/2015
ADBS-035/06US	METHODS OF MONITORING CONDITIONS BY SEQUENCE ANALYSIS	9,217,176	12-22-2015	034558/0047	12/19/2014	036503/0732	8/28/2015
ADBS-035/07US	METHODS OF MONITORING CONDITIONS BY SEQUENCE ANALYSIS	8,795,970	08/05/2014	034558/0047	12/19/2014	036503/0732	8/28/2015
ADBS-035/10US	METHODS OF MONITORING CONDITIONS BY SEQUENCE ANALYSIS	9,228,232	01/05/2016	034558/0047	12/19/2014	036503/0732	8/28/2015
ADBS-036/03US	MONITORING HEALTH AND DISEASE STATUS USING CLONOTYPE PROFILES	8,748,103	06/10/2014	026231/0657	5/5/2011	036503/0732	8/28/2015
ADBS-036/04US	MONITORING HEALTH AND DISEASE STATUS USING CLONOTYPE PROFILES	8,628,927	01/14/2014	032036/0287	1/24/2014	036503/0732	8/28/2015
ADBS-038/03US	SEQUENCE ANALYSIS OF COMPLEX AMPLICONS	8,691,510	4/8/2014	026231/0792	5/5/2011	036503/0732	8/28/2015
ADBS-039/03US	SINGLE CELL ANALYSIS BY POLYMERASE CYCLING ASSEMBLY	8,507,205	8/13/2013	026231/0882	5/5/2011	036503/0732	8/28/2015
ADBS-042/04US	METHOD OF DETERMINING CLONOTYPES AND CLONOTYPE PROFILES	9,043,160	5/26/2015	026696/0222	8/3/2011	036503/0732	8/28/2015

**Schedule A
PCT Applications**

Cooley Docket Number	Title	Application No.	Application Date	Reel/Frame Assignment	Date	Reel/Frame Merger	Date
ADBS-026/01WO	DETERMINING ANTIGEN-SPECIFIC T-CELLS AND B-CELLS	PCT/US2015/023915	4/1/2015	033328/0585	7/16/2014	037401/0224	1/4/2016
ADBS-027/01WO	DETECTION AND MEASUREMENT OF TISSUE-INFILTRATING LYMPHOCYTES	PCT/US2012/069310	12/12/2012	029864/0888 029888/0115	1/21/2013 02/27/2013	037401/0224	1/4/2016
ADBS-028/01WO	DETERMINING PAIRED IMMUNE RECEPTOR CHAINS FROM FREQUENCY MATCHED SUBUNITS	PCT/US2013/028942	3/4/2013	032174/0851 032171/0861	2/7/2014 02/07/2014	037401/0224	1/4/2016
ADBS-029/01WO	MONITORING IMMUNE RESPONSIVENESS TO CANCER VACCINATION	PCT/US2013/029181	3/5/2013	032172/0017	2/7/2014	037401/0224	1/4/2016
ADBS-030/01WO	CANCER VACCINATION WITH ANTIGEN EVOLUTION	PCT/US2014/047909	7/23/2014	033772/0098	9/18/2014	037401/0224	1/4/2016
ADBS-034/01WO	RARE CLONOTYPES AND USES THEREOF	PCT/US2014/017416	2/20/2014	030031/0824	3/18/2013	037401/0224	1/4/2016
ADBS-035/01WO	METHODS OF MONITORING CONDITIONS BY SEQUENCE ANALYSIS	PCT/US2009/006053	11/9/2009	027616/0326	1/30/2012	037401/0224	1/4/2016
ADBS-040/01WO	METHOD OF MEASURING IMMUNE ACTIVATION	PCT/US2012/068631	12/7/2012	027616/0422	1/30/2012	037401/0224	1/4/2016
ADBS-043/01WO	SEQUENCE-BASED MEASURES OF IMMUNE RESPONSE	PCT/US2012/053530	8/31/2012	029887/0762	2/27/2013	037401/0224	1/4/2016
ADBS-045/01WO	DETERMINING RESPONSIVENESS OF AUTOIMMUNE PATIENTS TO DMARD TREATMENT	PCT/US2012/058989	10/5/2012	029887/0916	2/27/2013	037401/0224	1/4/2016
ADBS-046/02WO	T-CELL RECEPTOR CLONOTYPES SHARED AMONG ANKYLOSING SPONDYLITIS PATIENTS	PCT/US2012/061977	10/25/2012	029888/0038	2/27/2013	037401/0224	1/4/2016
ADBS-047/02WO	CLONOTYPES AS BIOMETRIC SPECIMEN TAGS	PCT/US2012/067658	12/3/2012	038911/0974	10/29/2015	037401/0224	1/4/2016

Coolley Docket Number	Title	Application No.	Application Date	Reel/Frame Assignment	Date	Reel/Frame Merger	Date
ADBS-048/01WO	METHOD OF MEASURING IMMUNE ACTIVATION	PCT/US2012/069187	12/12/2012	029888/0234	02/27/2013	037401/0224	1/4/2016
ADBS-049/01WO	MONITORING TRANSFORMATION OF FOLLICULAR LYMPHOMA TO DIFFUSE LARGE B-CELL LYMPHOMA BY IMMUNE REPERTOIRE ANALYSIS	PCT/US2012/070674	12/19/2012	029693/0950	1/25/2013	037401/0224	1/4/2016
ADBS-050/05WO	DETECTION AND QUANTITATION OF SAMPLE CONTAMINATION IN IMMUNE REPERTOIRE ANALYSIS	PCT/US2013/035857	4/9/2013	030328/0246	5/1/2013	037401/0224	1/4/2016
ADBS-052/01WO	PREDICTING RELAPSE OF CHRONIC LYMPHOCYTIC LEUKEMIA PATIENTS TREATED BY ALLOGENEIC STEM CELL TRANSPLANTATION	PCT/US2013/043420	5/30/2013	033328/0538	7/16/2014	037401/0224	1/4/2016
ADBS-053/01WO	HIGH SENSITIVITY MUTATION DETECTION USING SEQUENCE TAGS	PCT/US2013/054189	8/8/2013	032174/0984	2/7/2014	037401/0224	1/4/2016
ADBS-038/03WO	SEQUENCE ANALYSIS OF COMPLEX AMPLICONS	PCT/US2011/000792	5/4/2011	026031/0289	3/28/2011	037401/0224	1/4/2016
ADBS-055/01WO	SINGLE CELL ANALYSIS USING SEQUENCE TAGS	PCT/US2013/051539	7/22/2013	034521/0513	12/16/2014	037401/0224	1/4/2016
ADBS-054/05WO	METHOD OF SEQUENCE DETERMINATION USING SEQUENCE TAGS	PCT/US2013/045276	6/11/2013	032175/0084	2/7/2014	037401/0224	1/4/2016
ADBS-057/03WO	MONITORING CLONOTYPES OF PLASMA CELL PROLIFERATIVE DISORDERS IN PERIPHERAL BLOOD	PCT/US2013/065493	10/17/2013	034521/0538	12/16/2014	037401/0224	1/4/2016
ADBS-058/01WO	MONITORING MANTLE CELL LYMPHOMA CLONOTYPES IN PERIPHERAL BLOOD AFTER IMMUNOTRANSPLANT	PCT/US2013/065757	10/18/2013	034521/0584	12/16/2014	037401/0224	1/4/2016

Coolay Docket Number	Title	Application No.	Application Date	Reel/Frame Assignment	Date	Reel/Frame Merger	Date
ADBS-059/01WO	MONITORING DIFFUSE LARGE B-CELL LYMPHOMA FROM PERIPHERAL BLOOD SAMPLES	PCT/US2013/065509	10/17/2013	034521/0565	12/16/2014	037401/0224	1/4/2016
ADBS-062/02WO	LARGE-SCALE BIOMOLECULAR ANALYSIS WITH SEQUENCE TAGS	PCT/US2014/044971	6/30/2014	033772/0216	9/18/2014	037401/0224	1/4/2016
ADBS-036/03WO	MONITORING HEALTH AND DISEASE STATUS USING CLONOTYPE PROFILES	PCT/US2011/000791	5/4/2011	027616/0552 029880/0979	1/30/2012 02/26/2013	037401/0224	1/4/2016
ADBS-051/02WO	MONITORING IMMUNOGLOBULIN IN HEAVY CHAIN EVOLUTION IN B-CELL ACUTE LYMPHOBLASTIC LEUKEMIA	PCT/US2013/037258	4/18/2013	033328/0511	7/16/2014	037401/0224	1/4/2016