

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT4004179

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
ARROWHEAD MADISON INC.	06/20/2016
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	ARROWHEAD PHARMACEUTICALS, INC.
<b>Street Address:</b>	225 SOUTH LAKE AVE., STE.1050
<b>City:</b>	PASADENA
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	91101
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	14552664
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(877)769-7945
<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>	
<b>Phone:</b>	(617) 542-5070
<b>Email:</b>	apsi@fr.com
<b>Correspondent Name:</b>	J. P. FASSE
<b>Address Line 1:</b>	FISH & RICHARDSON P.C.
<b>Address Line 2:</b>	P.O.BOX 1022
<b>Address Line 4:</b>	MINNEAPOLIS, MINNESOTA 55440-1022
<b>ATTORNEY DOCKET NUMBER:</b>	30621 US2 / 41790-0011002
<b>NAME OF SUBMITTER:</b>	LAKEISHA BRYANT
<b>SIGNATURE:</b>	/Lakeisha Bryant/
<b>DATE SIGNED:</b>	08/12/2016
<b>Total Attachments: 7</b>	
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## ASSIGNMENT

This Patent Assignment (Assignment) is made and entered into as of June 17, 2016, whereby **Arrowhead Madison Inc.** (Assignor), a corporation of the State of Delaware, United States of America, having its principal place of business at 465 Science Drive, Ste. C, Madison, Wisconsin, United States of America, hereby irrevocably and unconditionally assigns, grants, conveys, and transfers to

**Arrowhead Pharmaceuticals, Inc.** (Assignee)  
225 South Lake Ave., Ste. 1050,  
Pasadena, California 91101

all of Assignor's right, title and interest for all countries of the world in and to the patents and applications for patents listed in **Schedule A** and the inventions described and claimed therein, as well as in any subsequent application(s) and patents that issue therefrom in all countries of the world, which subsequent application(s) claims priority to any of the patents or patent applications listed in **Schedule A**.

The present assignment is for, but is not limited to, the following countries and is for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged:

Argentina, Australia, Austria, Belgium, Brazil, Canada, Chile, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Japan, Kazakhstan, Korea, Luxembourg, Mexico, Monaco, Netherlands, New Zealand, Norway, Pakistan, People's Republic of China, Philippines, Poland, Portugal, Russia, Saudi Arabia, South Africa, Spain, Sweden, Switzerland, Taiwan, United Kingdom of Great Britain and Northern Ireland, Ukraine, Uruguay, United States, Venezuela.

Assignor hereby irrevocably and unconditionally grants, conveys, transfers, and assigns to Assignee (i) all of Assignor's right, title, and interest in and to the patents and the patent applications set forth on **Schedule A** and the inventions claimed therein, including the rights to file, prosecute, obtain issuance of, maintain and enforce U.S., foreign or international counterparts thereof, and continuations, continuations-in-part, divisions, extensions, reissues, reexaminations, and renewals of any of the foregoing, and other patent applications that claim the inventions claimed in such applications and have a right of priority thereto, including all rights in any patents issuing on any of the foregoing (collectively, the Assigned Patent Rights); (ii) all causes of action (whether known or unknown or whether currently pending, filed, or otherwise) and other enforcement rights under, or on account of, any of the Assigned Patents Rights, including, without limitation, all causes of action and other enforcement rights for (A) damages, (B) injunctive relief, (C) inventorship rights and (D) any other remedies of any kind for past, current and future infringement; and (iii) rights to collect royalties or other payments under or on account of any of the Assigned Patent Rights, the same to be held by Assignee for Assignee's own use and enjoyment, and for the use and enjoyment of Assignee's successors, assigns and other legal representatives, as fully and entirely as the same would have been held and enjoyed by Assignor if this Assignment had not been made; together with all rights to income, royalties, and license fees deriving from the Assigned Patent Rights, causes of actions, claims for damages, and demands or other rights for, or arising from, any past, present, and future infringement or other violation of the Assigned Patent Rights, and the right to sue for and collect such past, present and future damages, as permitted under the applicable laws for any jurisdiction or country in which such claims may be asserted for the use and benefit of Assignee and its successors, assigns and other legal representatives.

Assignor agrees to execute any additional assignments and writings as well as to perform any additional acts necessary to enable Assignee to enjoy the full rights of the present Assignment and perfect Assignee's right, title and interest throughout the world in all Assigned Patent Rights. In the event Assignee is unable for any reason to secure Assignor's signature on any document needed to perfect the transfer of ownership of the Assigned Patent Rights, Assignor hereby irrevocably designates and appoints Assignee and its duly authorized officers and agents as Assignor's agent and attorney-in-fact to act for and on Assignor's behalf to execute and file such documents, with the same legal force and effect as if executed by Assignor.

Assignor represents and warrants that it has the right and authority to make this Assignment, free and clear of any lien, encumbrance, security interest, or any other restriction on transfer, and that this Assignment is not contrary to any current or prior obligations of Assignor.

If any term, provision, covenant or restriction of this Assignment is held by a court of competent jurisdiction or other Governmental authority to be invalid, void or unenforceable, the remainder of the terms, provisions, covenants and restrictions of this Assignment shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

[REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK; SIGNATURE PAGE FOLLOWS]

[SIGNATURE PAGE TO ASSIGNMENT]

IN WITNESS WHEREOF, Assignee and Assignor have each executed this Assignment, or have caused this Assignment to be executed in its behalf by a representative duly authorized, all as of the date first above set forth.

Madison, Wisconsin, U.S.A.

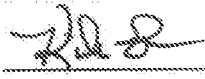
ARROWHEAD MADISON INC.  
(Assignor)

By:   
David Lewis  
Chief Scientific Officer

**ACKNOWLEDGMENT**

State of Wisconsin }  
County of Dane }

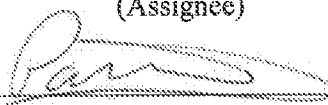
On this 20th day of June, 2016, before me personally appeared **David Lewis** to me known to be the person described in the foregoing Assignment, who acknowledged that he executed the foregoing Assignment on behalf of **Arrowhead Madison Inc.**, and that he is empowered to execute the foregoing Assignment and to convey the rights granted thereunder.

  
Kirk Ekena, Notary Public  
My commission expires 12 March 2017

[SIGNATURE PAGE TO ASSIGNMENT]

Pasadena, California, U.S.A.

ARROWHEAD PHARMACEUTICALS, INC.  
(Assignee)

By:   
Patrick C. O'Brien  
General Counsel

**ACKNOWLEDGMENT**

State of California    )  
County of Los Angeles    )

On this \_\_\_\_ day of \_\_\_\_\_, 2016, before me personally appeared **Patrick C. O'Brien** to me known to be the person described in the foregoing Assignment, who acknowledged that he executed the foregoing Assignment on behalf of **Arrowhead Pharmaceuticals, Inc.**, and that he is empowered to execute the foregoing Assignment and to convey the rights granted thereunder.

See attached page  
Mary Therese Mumolo  
Notary Public  
My commission expires November 12, 2016

# CALIFORNIA ALL- PURPOSE CERTIFICATE OF ACKNOWLEDGMENT

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 California }

County of Los Angeles }

On June 29, 2016 before me, Mary Therese Mumolo, Notary Public.  
(Please insert name and title of the officer)

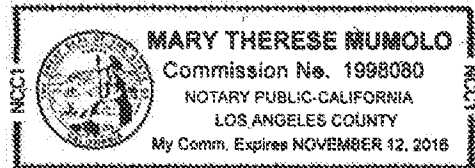
personally appeared Patrick C. O'Brien  
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s)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

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.

Mary Therese Mumolo  
Notary Public Signature

(Notary Public Seal)



## ADDITIONAL OPTIONAL INFORMATION

DESCRIPTION OF THE ATTACHED DOCUMENT

Assignment  
(Title or description of attached document)

(Title or description of attached document continued)

Number of Pages 6 Document Date 06/17/16

CAPACITY CLAIMED BY THE SIGNER

Individual (s)

Corporate Officer  
General Counsel  
(Title)

Partner(s)

Attorney-in-Fact

Trustee(s)

Other \_\_\_\_\_

## INSTRUCTIONS FOR COMPLETING THIS FORM

*This form complies with current California statutes regarding notary wording and, if needed, should be completed and attached to the document. Acknowledgments from other states may be completed for documents being sent to that state so long as the wording does not require the California notary to violate California notary law.*

- State and County information must be the State and County where the document signer(s) personally appeared before the notary public for acknowledgment.
- Date of notarization must be the date that the signer(s) personally appeared which must also be the same date the acknowledgment is completed.
- The notary public must print his or her name as it appears within his or her commission followed by a comma and then your title (notary public).
- Print the name(s) of document signer(s) who personally appear at the time of notarization.
- Indicate the correct singular or plural forms by crossing off incorrect forms (i.e. he/she/they- is /are ) or circling the correct forms. Failure to correctly indicate this information may lead to rejection of document recording.
- The notary seal impression must be clear and photographically reproducible. Impression must not cover text or lines. If seal impression smudges, re-seal if a sufficient area permits, otherwise complete a different acknowledgment form.
- Signature of the notary public must match the signature on file with the office of the county clerk.
  - ❖ Additional information is not required but could help to ensure this acknowledgment is not misused or attached to a different document.
  - ❖ Indicate title or type of attached document, number of pages and date.
  - ❖ Indicate the capacity claimed by the signer. If the claimed capacity is a corporate officer, indicate the title (i.e. CEO, CFO, Secretary).
- Securely attach this document to the signed document with a staple.

Schedule A

Docket Number	Filing Date	Application Number	Publication Number	Patent Number
25421 US2	17-Aug-2007	11840468	US-2008-0152661-A1	8,137,695
25421 US3	12-Feb-2012	13368796	US-2012-0230938-A1	8,658,211
25421 US5	19-May-2008	12123124	US-2009-0023890-A1	7,985,406
25421 US7b	12-Jan-2015	14594229		
25421 US8	17-Jun-2008	12140681	US-2008-0287628-A1	8,008,355
25421 US9	17-Jun-2008	12140751	US-2008-0281074-A1	8,541,548
25421 US11	17-Jun-2008	12140703	US-2008-0287630-A1	8,017,109
25750 US6	23-Nov-1999	09447966	US-2001-0004636-A1	6,627,616
25751 US1	3-Jan-1997	08778657		6,126,964
25751 US2	30-Dec-1997	09000692		6,339,067
25751 US6	12-Jan-2004	10755785	US-2004-0161463-A1	7,022,525
25751 US7	5-Dec-2001	10004763	US-2002-0085989-A1	7,049,144
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25752 US2	6-Nov-2000	09707000		7,507,722
25752 US3	30-Mar-2007	11694140	US-2007-0244067-A1	7,642,248
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25757 US3	27-Feb-2002	10085378	US-2003-0166280-A1	6,897,068
25758 US2	27-May-2004	10855175	US-2004-024252A1	7,803,782
25758 US3	10-Dec-2004	11008856	US-2005-0182013-A1	7,015,040
25768 US1	27-Aug-2002	10229786	US-2010-0120152-A1	8,021,875
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25775 US1	27-Jan-2004	10765668	US-2004-0151775-A1	7,871,818
25776 US1	5-Feb-2004	10772502	US-2004-0156909-A1	7,682,626
25776 US2	19-May-2008	12123104	US-2009-0048410-A1	8,138,383
25788 US1	2-Jan-2001	09753990	US-2001-0024829-A1	6,383,811
25788 US2	11-Mar-2002	10095682	US-2002-0160515-A1	6,794,189
25788 US3	26-Jul-2004	10899509	US-2005-0037496-A1	7,098,030
25788 US4	11-Mar-2002	10095680	US-2003-0026841-A1	6,919,091
25788 US5	11-Mar-2002	10095789	US-2003-0008009-A1	7,033,607
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25788 US7	11-Mar-2002	10095752	US-2002-0160515-A1	6,881,576
25794 US2	7-Jun-2000	09589978		6,630,351
25794 US4	23-May-2003	10444662	US-2003-0220264-A1	7,019,113
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25794 US6	15-Jul-2003	10619778	US-2004-0058446-A1	7,138,382
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27028 US1	18-Oct-2011	13275377	US-2012-159657-A1	8,946,176
27028 US2	22-Dec-2014	14578716	US-2015-0113670-A1	
27187 US1	15-Dec-2011	13326433	US-2012-0165393-A1	8,501,930
27187 US2	25-Jun-2013	13926380	US-2013-0281658-A1	9,107,957
27187 US3	1-Jul-2015	14789142	US-2015-0352221-A1	
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27188 US1	15-Dec-2011	13327271	US-2012-0157509-A1	9,249,179
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30620 US3	22-Jun-2015	14746070	US 2015-0283256 A1	
30621 US1	23-Aug-2012	13592403	US-2013-0317079-A1	8,933,047
30621 US2	25-Nov-2014	14552664	US-2015-0104408-A1	
30622 US1	6-Aug-2014	14452626	US 2015-0045573 A1	
30624 US1	16-Jun-2015	14740307	US-2015-0361427-A1	
30626 US1	16-Mar-2016	15071634		
30628 US	1-Oct-2015	62235816		
30629-US1	27-May-2016	15166311		
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30633 US1	10-Mar-2016	15066106		
30634 US1	16-Mar-2016	15071395		
30635 US	7-Aug-2015	62202253		
30636 US	14-Jan-2016	62278620		
30638 US	10-Feb-2016	62293600		
30640 US	7-Mar-2016	62304652		
30644-US	6-Jun-2016	62346304		