

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT4085753

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
JON E. CHATTERTON	02/09/2009
ABBOT F. CLARK	02/06/2009
MARTIN B. WAX	02/03/2009
RECEIVING PARTY DATA	
Name:	ARROWHEAD PHARMACEUTICALS, INC.
Street Address:	225 SOUTH LAKE AVENUE
Internal Address:	SUITE 1050
City:	PASADENA
State/Country:	CALIFORNIA
Postal Code:	91101
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	15277058
CORRESPONDENCE DATA	
Fax Number:	
<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>	
Phone:	608-316-3896
Email:	patents@arrowheadpharma.com
Correspondent Name:	KIRK EKENA
Address Line 1:	465 SCIENCE DRIVE
Address Line 2:	SUITE C
Address Line 4:	MADISON, WISCONSIN 53711
ATTORNEY DOCKET NUMBER:	N903472-US3
NAME OF SUBMITTER:	KIRK EKENA
SIGNATURE:	/Kirk Ekena/
DATE SIGNED:	10/06/2016
Total Attachments: 32	
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ASSIGNMENT

WHEREAS I am a below named joint inventor of the invention entitled:

RNAi-MEDIATED INHIBITION OF CONNEXIN 43 FOR TREATMENT OF IOP-RELATED CONDITIONS

and described in a United States Patent Application filed with the United States Patent and Trademark Office on February 13, 2009, and further identified by Attorney Docket No.3472 US, which claims priority to U.S. Provisional Application, Serial No.61/028,966, filed February 15, 2008; and

WHEREAS, ALCON RESEARCH, LTD. having a place of business at 6201 South Freeway, Fort Worth, Texas 76134, is desirous of acquiring the entire right, title and interest in and to said invention and to any and all Letters Patent of the United States and foreign countries which may be obtained therefor;

NOW, THEREFORE, for good and valuable consideration, I do hereby sell, assign and transfer to ALCON RESEARCH, LTD., its legal representatives, successors, and assigns, the entire right, title and interest in and to said invention as set forth in the above-mentioned application, and in and to any and all patents of the United States and foreign countries which may be issued for said invention;


UPON SAID CONSIDERATIONS, I hereby agree that I will not execute any writing or do any act whatsoever conflicting with these presents, and that I will, at any time upon request, without further or additional consideration but at the expense of said assignee, execute such additional assignments and other writings and do such additional acts as said assignee may deem necessary or desirable to perfect the assignee's enjoyment of this grant and render all necessary assistance in making application for and obtaining original, divisional, continuation-in-part, reexamined, reissued, or other Letters Patent of the United States or of any and all foreign countries on said invention and in enforcing any rights in action accruing as a result of such applications or patents, said assistance to include my cooperation in all prosecution associated with obtaining such applications or patents and my provision of testimony in any proceedings or transactions involving such applications or patents, it being understood that the foregoing covenant and agreement shall bind, and inure to the benefit of, the assigns and legal representatives of assignor and assignee.

AND I request the Commissioner of Patents and Trademarks to issue any Letters Patent of the United States which may be issued for said invention to said ALCON RESEARCH, LTD., its legal representatives, successors or assigns, as the sole owner of the entire right, title and interest in said patent and the invention covered thereby.

Full name of joint inventor: Jon E. CHATTERTON

Address: 3055 Bellaire Ranch Drive, Apt. 1021
Fort Worth, Texas 76109 USA

Inventor's signature:

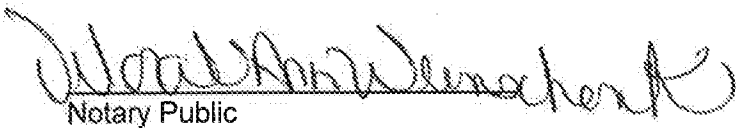
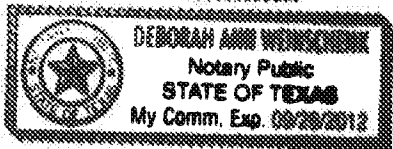
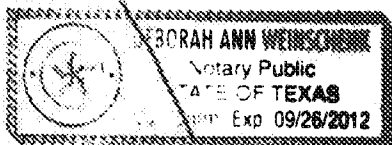


Date:

2/9/09

STATE OF TEXAS §
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COUNTY OF TARRANT §

On this 9th day of February, 2009, before me personally appeared Jon E. Chatterton to me known to be the person named in and who executed the above instrument, and acknowledged to me she executed the same for the uses and purposes therein set forth.


Notary Public

AND I request the Commissioner of Patents and Trademarks to issue any Letters Patent of the United States which may be issued for said invention to said ALCON RESEARCH, LTD., its legal representatives, successors or assigns, as the sole owner of the entire right, title and interest in said patent and the invention covered thereby.


Full name of joint inventor: Abbot F. CLARK
Address: 5603 Rachel Court
Arlington, Texas 76017 USA

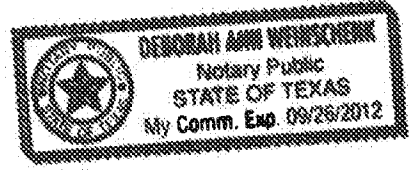
Inventor's signature: 

Date: 6 February 2009

STATE OF TEXAS §
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COUNTY OF TARRANT §

On this 6th day of February, 2009, before me personally appeared Abbot F. Clark to me known to be the person named in and who executed the above instrument, and acknowledged to me she executed the same for the uses and purposes therein set forth.


Notary Public



AND I request the Commissioner of Patents and Trademarks to issue any Letters Patent of the United States which may be issued for said invention to said ALCON RESEARCH, LTD., its legal representatives, successors or assigns, as the sole owner of the entire right, title and interest in said patent and the invention covered thereby.

Full name of joint inventor: Martin B. WAX

Address: 1607 Sleepy Hollow Court
Westlake, Texas 76262 USA

Inventor's signature:

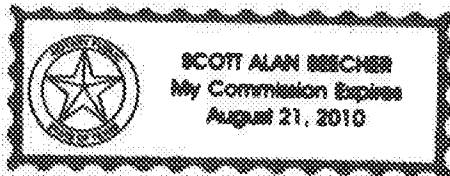
Martin B Wax
[Signature]

Date:

2/3/09

STATE OF TEXAS §
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COUNTY OF TARRANT §

On this 3 day of February, 2009, before me personally appeared Martin B. Wax to me known to be the person named in and who executed the above instrument, and acknowledged to me she executed the same for the uses and purposes therein set forth.



Scott Alan Beecher
Notary Public

PATENT ASSIGNMENT

This Patent Assignment (this "**Assignment**") dated April 20, 2015 and deemed to have effect as of March 13, 2015, by and between Arrowhead Research Corporation, a Delaware corporation having an address at 225 South Lake Avenue, Suite 1050, Pasadena, California 91101 ("**Assignee**"), and Alcon Research, Ltd., a Delaware corporation having an address at 6201 South Freeway, Fort Worth, TX 76134-2099 ("**Assignor**" and, together with Assignee, the "**Parties**").

WHEREAS, Novartis Institutes for BioMedical Research, Inc., and Assignee are parties to the Asset Purchase and Exclusive License Agreement entered into as of March 3, 2015 (the "**Purchase and License Agreement**"; capitalized terms used herein without definition shall have the meanings assigned to them in the Purchase and License Agreement), pursuant to which Assignor has agreed to sell to Assignee and Assignee has agreed to purchase from Assignor, the Acquired RNAi Assets, including without limitation, the patents and patent applications set forth on Schedule A hereto and described below; and

WHEREAS, Assignor desires to sell and assign, and Assignee desires to purchase and acquire, Assignor's entire right, title and interest in and to such patents and patent applications;

NOW, THEREFORE, in consideration of mutual covenants and agreements set forth below and the Purchase and License Agreement, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and intending to be legally bound hereby, the Parties hereto agree as follows:

1. **ASSIGNMENT.** Assignor hereby irrevocably and unconditionally grants, conveys, transfers, and assigns to Assignee 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 Patent 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 after the Closing, 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.

2. **FURTHER ASSURANCE.** Assignor agrees, without charge to Assignee, to assist Assignee in perfecting Assignee's right, title and interest throughout the world in all Assigned Patent Rights, and the intellectual property rights therein assigned to Assignee hereunder, include executing applications, assignments, declarations, affidavits, and any other papers in connection therewith reasonably necessary to perfect such right, title and interest in Assignee. In the event Assignee is unable for any reason, after reasonable effort, 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, which appointment is coupled with an interest, 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 agrees to provide such assistance and cooperation as Assignee may reasonably request in connection with Assignee's prosecution of any patent applications included in the Assigned Patent Rights (including appeals in connection therewith), including providing documents and materials in the possession or control of Assignor and making the named inventors in any of the patent applications reasonably available to Assignee upon reasonable prior notice if such inventors remain employed by Assignor or any of its Affiliates at the time of Assignor's receipt of such written notice from Assignee.

3. **GENERAL.**

3.1 Severability. 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 so long as the economic or legal substance of the transactions contemplated hereby is not affected in any manner materially adverse to any Party. Upon such a determination, the Parties shall negotiate in good faith to modify this Assignment so as to effect the original intent of the Parties as closely as possible in an acceptable manner in order that the transactions contemplated hereby be consummated as originally contemplated to the fullest extent possible..

3.2 Amendments and Waivers. Any provision of this Assignment may be amended or waived if, but only if, such amendment or waiver is in writing and is signed, in the case of an amendment, by each Party, or in the case of a waiver, by the Party against whom the waiver is to be effective. No failure or delay by any Party in exercising any right, power or privilege hereunder shall operate as a waiver thereof nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any other right, power or privilege. The rights and remedies herein provided shall be cumulative and not exclusive of any rights or remedies provided by law.

3.3 Entire Agreement. The Purchase and License Agreement, this Assignment and the other Transaction Documents constitute the entire agreement between the Parties with respect to the subject matter of this Assignment and supersede all prior agreements and understandings,

both oral and written, between the Parties with respect to the subject matter of Purchase and License Agreement, this Assignment and the other Transaction Documents. Nothing in this Assignment shall itself change, amend, extend or alter (nor shall it be deemed or construed as changing, amending, extending or altering) the terms or conditions of the Purchase and License Agreement in any manner whatsoever. Assignor acknowledges and agrees that the representations, warranties, covenants, agreements and indemnities contained in the Purchase and License Agreement shall not be superseded hereby but shall remain in full force and effect to the extent provided therein. In the event of any conflict or inconsistency between the terms of the Purchase and License Agreement and the terms hereof, the terms of the Purchase and License Agreement shall govern.

3.4 Successors and Assigns. This Assignment shall be binding upon and inure to the benefit of the Parties and their respective successors and assigns. This Assignment and the rights and obligations hereunder shall not be assignable by Assignor without the prior written consent of Assignee, and any such purported assignment without such consent shall be void. This Assignment and the rights granted to Assignor hereunder shall be assignable by Assignee without the written consent of Assignor.

3.5 Governing Law. This Assignment shall be governed by and construed in accordance with the law of the State of Delaware, without regard to the conflicts of law rules of such state.

3.6 Jurisdiction. The Parties agree that any suit, action or proceeding seeking to enforce any provision of, or based on any matter arising out of or in connection with, this Assignment or the transactions contemplated hereby shall be brought in the United States District Court for the District of Delaware or the Court of Chancery of the State of Delaware, so long as one of such courts shall have subject matter jurisdiction over such suit, action or proceeding, and that any cause of action arising out of this Assignment shall be deemed to have arisen from a transaction of business in the State of Delaware, and each of the Parties hereby irrevocably consents to the jurisdiction of such courts (and of the appropriate appellate courts therefrom) in any such suit, action or proceeding and irrevocably waives, to the fullest extent permitted by Applicable Law, any objection that it may now or hereafter have to the laying of the venue of any such suit, action or proceeding in any such court or that any such suit, action or proceeding brought in any such court has been brought in an inconvenient forum. Process in any such suit, action or proceeding may be served on any Party anywhere in the world, whether within or without the jurisdiction of any such court. Without limiting the foregoing, each Party agrees that service of process on such Party as provided in Section 8.01 of the Purchase and License Agreement shall be deemed effective service of process on such Party.

3.7 Counterparts; Effectiveness. This Assignment may be signed in any number of counterparts, each of which shall be an original, with the same effect as if the signatures thereto and hereto were upon the same instrument. This Assignment shall become effective when each Party shall have received a counterpart hereof signed by the other Party hereto. Until and unless each Party has received a counterpart hereof signed by the other Party hereto, this Agreement shall have no effect and no Party shall have any right or obligation hereunder (whether by virtue of any other oral or written agreement or other communication).

IN WITNESS WHEREOF, each of the parties hereto has executed this Assignment, or has caused this Assignment to be executed on its behalf by a representative duly authorized, all as of the date first above set forth.

“Assignor”

ALCON RESEARCH, LTD.

By: [Signature]
Name: Jason Dacey
Title: Director, Sr. Legal Counsel

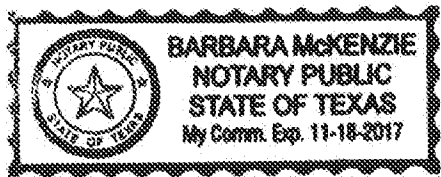
STATE OF TEXAS

COUNTY OF TARRANT

On this 20 day of April 2015 before me personally appeared Jason Dacey to me known to be the person named in and who executed the above instrument, and acknowledged to me that he executed the same for the uses and purposes therein set forth.

Barbara McKenzie

Notary Public



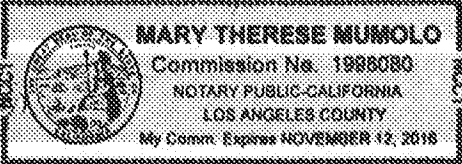
"Assignee"

ARROWHEAD RESEARCH CORPORATION

By: *[Signature]*
Name: Patrick O'Brien
Title: General Counsel

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, USA
County of Los Angeles
This instrument was acknowledged before me on 04/22/2015 by Patrick O'Brien as an officer of Arrowhead Research Corporation

	Signature: <u><i>Mary Therese Mumolo</i></u>
	Name: <u>Mary Therese Mumolo</u>
	Title: <u>Notary Public</u>

SCHEDULE A

ALCON RESEARCH, LTD.

Case reference	Filing Date	Filing Number	Publication Number	Grant Number
HIF1A siRNA FOR TREATMENT OF OCULAR ANGIOGENESIS				
PAT903021-AR-NP	19 Dec 2006	P060105621	AR056852A1	
PAT903021-AU-PCT	19 Dec 2006	2006330590		
PAT903021-BR-PCT	19 Dec 2006	PI0620725-1		
PAT903021-CA-PCT	19 Dec 2006	2632595		
PAT903021-CL-NP	18 Dec 2006	2006-3561		
PAT903021-CN-PCT	19 Dec 2006	2006800465657	101326287A	
PAT903021-EG-PCT	19 Dec 2006	PCTNA/1039/08		
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PAT903021-MX-PCT	19 Dec 2006	2008/007106		
PAT903021-PH-PCT	19 Dec 2006	1-2008-501298		
PAT903021-RU-PCT	19 Dec 2006	2008130857		
PAT903021-TH-NP	12 Dec 2006	0601006190		
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PAT903021-US-DIV	16 Feb 2010	12/706014	20100144844	7981870
PAT903021-US-DIV02	23 May 2011	13/113782	110257246	
PAT903021-US-DIV03	17 May 2012	13/474405	2012/0245217	8471000
PAT903021-US-DIV04	29 May 2013	13/904431	2013/0245098	8940887
PAT903021-US-DIV05	10 Dec 2014	14/566234		
PAT903021-US-NP	19 Dec 2006	11/642016	070155690	
PAT903021-US-PSP	29 Dec 2005	60/754956		
PAT903021-UY-NP	21 Dec 2006	30.061		
PAT903021-VE-NP	20 Dec 2006	2991-2006		
PAT903021-WO-PCT	19 Dec 2006	PCT/US06/062293	WO/2007/076351	
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IGF1R siRNA FOR TREATMENT OF OCULAR ANGIOGENESIS				
PAT903024-AT-EPT	29 Dec 2006	06840364.1	E572042	1966368
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PAT903024-US-CNT	19 Nov 2009	12/622007		
PAT903024-US-DIV	28 Mar 2014	14/229055	2014-0364480	
PAT903024-US-NP	29 Dec 2006	11/617899	070275922	
PAT903024-US-PSP	29 Dec 2005	60/754796	US20070275922	
PAT903024-WO-PCT	29 Dec 2006	PCT/US06/062750	WO/2007/076548	
PAT903024-ZA-PCT	29 Dec 2006	2008/05601		2008/05601

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PAT903025-US-CNT	16 Oct 2009	12/580663		8673873
PAT903025-US-DIV	23 Jan 2014	14/162581	2014/0171487	
PAT903025-US-NP	28 Dec 2006	11/617604		
PAT903025-US-PSP	28 Dec 2005	60/754372		
TNF ALPHA siRNA TO TREAT INFLAMMATION, DRY EYE, OCULAR PAIN				
PAT903040-AR-NP	21 May 2007	P070102199	AR061064A1	
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PAT903040-HK-FPR	19 Jun 2009	09105531.6		HK1128090
PAT903040-IN-PCT	17 May 2007	4326KOLNP2008		
PAT903040-IT-EPT	17 May 2007	07797553.0	2018426	2018426
PAT903040-JP-PCT	17 May 2007	2009-511237		
PAT903040-JP-PCTD	11 Dec 2012	2012-270347	2009-511237	
PAT903040-JP-PCTD02	11 Dec 2012	2012-270348	2013-49728	
PAT903040-KR-PCT	17 May 2007	2008-7030030		
PAT903040-KR-PCTD	17 May 2007	1020127013309		
PAT903040-MX-PCT	17 May 2007	2008/014260		288925
PAT903040-MX-PCTD	17 May 2007	2011/001822		
PAT903040-PH-PCT	17 May 2007	2008-502546		1-2008-502546
PAT903040-PL-EPT	17 May 2007	07797553.0	2018426	2018426
PAT903040-RU-PCT	17 May 2007	2008150324	2008150324	2469090
PAT903040-SA-DIV	19 May 2007	111320165		
PAT903040-SA-NP	19 May 2007	07280255		
PAT903040-TR-EPT	17 May 2007	07797553.0	2018426	2018426
PAT903040-TW-NP	18 May 2007	96117872	200812623	

PAT903040-US-DIV	04 Feb 2010	12/700188	100166676	
PAT903040-US-DIV02	25 Feb 2011	13/035147	20110142767	8541389
PAT903040-US-DIV03	22 Aug 2013	13/973176	2013/0338213	
PAT903040-US-DIV04	03 Apr 2014	14/244623	2014/0357694	
PAT903040-US-NP	17 May 2007	11/750262	20070281901	7732421
PAT903040-US-PSP	19 May 2006	60/801788		
PAT903040-UY-NP	22 May 2007	30.361	95	
PAT903040-WO-PCT	17 May 2007	PCT/US07/069165	WO/2007/137129	
PAT903040-ZA-PCT	17 May 2007	2008/09203		2008/09203
HISTAMINE RECEPTOR HI siRNA FOR INFLAMMATION/ ALLERGY/ PAIN/CATARACT, NASAL				
PAT903041-AR-NP	13 Apr 2007	P070101582	AR060449A1	
PAT903041-EP-EPT	10 Apr 2007	07760365.2	2003971	
PAT903041-EP-ETD	17 Jun 2013	13172325.6	2674493	
PAT903041-JP-PCT	10 Apr 2007	2009-505565	2009533466	5473594
PAT903041-TW-NP	12 Apr 2007	96112906	200808361	
PAT903041-US-PCT	10 Apr 2007	12/296565	20090274631	8017592
PAT903041-US-PCTD	30 Jun 2011	13/173512	20110269822	8222227
PAT903041-US-PCTD02	11 Jun 2012	13/493098	2012/0264809	8618278
PAT903041-US-PCTD03	22 Nov 2013	14/087344	20140088172	
PAT903041-US-PSP	13 Apr 2006	60/791623		
PAT903041-WO-PCT	10 Apr 2007	PCT/US07/066287	WO/2007/121156	
RNAi-MEDIATED INHIBITION OF SPLEEN TYROSINE KINASE- RELATED INFLAMMATORY CONDITIONS				
PAT903043-AR-NP	13 Apr 2007	P070101581	AR060448A1	
PAT903043-AU-PCT02	13 Apr 2007	2007238027		2007238027
PAT903043-AU-PCTD02	17 Jul 2013	2013207601		
PAT903043-BR-PCT02	13 Apr 2007	PI0709506-6	2115	
PAT903043-CA-PCT02	13 Apr 2007	2649138		
PAT903043-CN-PCT02	13 Apr 2007	200780013188.1	101443020A	
PAT903043-CN-PCTD	13 Apr 2007	2010105249510	101972483	
PAT903043-EP-EPT	13 Apr 2007	07760636.6	2004240	
PAT903043-EP-ETD	16 Jul 2013	13176714.7	2662446	
PAT903043-JP-PCT02	13 Apr 2007	2009-505636		
PAT903043-KR-PCT02	13 Apr 2007	2008-7027710		
PAT903043-MX-PCT02	13 Apr 2007	2008/013068		309758
PAT903043-MX-PCTD02	22 May 2013	MX/a/2013/005786		
PAT903043-TW-DIV	27 May 2013	102118618	201336514	
PAT903043-TW-NP	12 Apr 2007	96112900	200808360	
PAT903043-US-PCT02	13 Apr 2007	12/296621	20090324507	8048863
PAT903043-US-PCTD	30 Jun 2011	13/172964	20110288157	8865671

PAT903043-US-PCTD02	05 May 2014	14/270174	2014/0357695	
PAT903043-US-PSP	13 Apr 2006	60/791847		
PAT903043-WO-PCT	10 Apr 2007	US2007066317		
PAT903043-WO-PCT02	13 Apr 2007	PCT/US07/066619	WO/2007/121347	
PAT903043-ZA-PCT02	13 Apr 2007	12/296621		2008/08744
RNAi-MEDIATED INHIBITION OF SPLEEN TYROSINE KINASE- RELATED INFLAMMATORY CONDITIONS				
PAT903319-AR-NP	01 Aug 2008	P080103367		
PAT903319-CL-NP	01 Aug 2008	2008-2277		
PAT903319-GC-NP	03 Aug 2008	11443		
PAT903319-TW-NP	01 Aug 2008	97129263	200916117	
PAT903319-US-DIV	29 Jun 2010	12/825552	100267811	
PAT903319-US-DIV02	27 Jun 2011	13/169549	20110257248	8754202
PAT903319-US-DIV03	05 May 2014	14/270197	2014/0357696	
PAT903319-US-NP	01 Aug 2008	12/184351	090036396	
PAT903319-US-PSP	03 Aug 2007	60/953825		
PAT903319-UY-NP	01 Aug 2008	31.267		
PAT903319-WO-PCT	01 Aug 2008	PCT/US08/071885	WO/2009/020847	
TRANSFERRIN/TRANSFERRIN RECEPTOR-MEDIATED siRNA DELIVERY				
PAT903353-US-CNT	20 May 2011	13/112635	20110256156	8399653
PAT903353-US-DIV	12 Feb 2013	13/765216	2013/0177580	
PAT903353-US-NP	02 Oct 2008	12/244027		7973019
PAT903353-US-PSP	03 Oct 2007	60/977221		
PAT903353-US-PSP02	03 Oct 2007	60/977272		
PAT903353-WO-PCT	20 May 2011	US2011037367	2012/161677	
LOW DENSITY LIPOPROTEIN RECEPTOR-MEDIATED siRNA DELIVERY				
PAT903373-AR-NP	14 Nov 2008	P080104979	AR069328A1	
PAT903373-TW-NP	14 Nov 2008	97144141	200930405	
PAT903373-US-DIV	01 Jun 2011	13/150317	20110230410	8268798
PAT903373-US-DIV02	13 Aug 2012	13/584256		8569258
PAT903373-US-DIV03	23 Sep 2013	14/033711	20140018296	8937051
PAT903373-US-DIV04	10 Dec 2014	14/566325		
PAT903373-US-NP	14 Nov 2008	12/271476	090131358	
PAT903373-US-PSP	15 Nov 2007	60/988162		
PAT903373-WO-PCT	14 Nov 2008	PCT/US08/083614	WO/2009/065022	
RNAi-RELATED				

INHIBITION OF TNFα SIGNALING PATHWAY FOR TREATMENT OF GLAUCOMA				
PAT903407-AR-NP	01 Aug 2008	P080103368	AR067786A1	
PAT903407-CL-NP	01 Aug 2008	2008-2278		
PAT903407-GC-NP	03 Aug 2008	11442		
PAT903407-TW-NP	01 Aug 2008	97129271	200914052	
PAT903407-US-DIV	10 Feb 2011	13/024621	20110135579	8865670
PAT903407-US-DIV02	12 Sep 2014	14/484972		
PAT903407-US-NP	01 Aug 2008	12/184403	090035225	
PAT903407-US-PSP	03 Aug 2007	60/953809		
PAT903407-UY-NP	01 Aug 2008	31.266		
PAT903407-WO-PCT	01 Aug 2008	PCT/US08/071886	WO/2009/020848	
INTERFERING RNA DELIVERY SYSTEM AND USES THEREOF				
PAT903420-AR-NP	16 Dec 2008	P080105463		
PAT903420-CL-NP	17 Dec 2008	2008-3771		
PAT903420-GC-NP	17 Dec 2008	12450		
PAT903420-TW-NP	16 Dec 2008	97148925	200932274	
PAT903420-US-DIV	14 Dec 2010	12/967182	20110082092	8664375
PAT903420-US-DIV02	17 Jan 2014	14158179	2014/0135267	
PAT903420-US-NP	18 Dec 2008	12/338252	20090156470	7879813
PAT903420-US-PSP	18 Dec 2007	61/014472		
PAT903420-UY-NP	17 Dec 2008	31.543		
PAT903420-WO-PCT	18 Dec 2008	PCT/US08/087473	WO/2009/079635	
CONNEXIN 43 siRNA FOR TREATMENT OF IOP-RELATED CONDITIONS				
PAT903472-US-NP	13 Feb 2009	12/371007	20090209627	
PAT903472-US-PSP	15 Feb 2008	61/028966		
PAT903472-WO-PCT	13 Feb 2009	PCT/US09/034023	WO/2009/102931	
siRNA TARGETING VEGF				
PAT903839-AR-NP	28 Jul 2011	20110102737		
PAT903839-AU-PCT	26 Jul 2011	2011282902		
PAT903839-BR-PCT	26 Jul 2011	1120130019182	1120130019182	
PAT903839-CA-PCT	26 Jul 2011	2804847		
PAT903839-CL-PCT	26 Jul 2011	2013-00237	2013-00237	
PAT903839-CN-PCT	26 Jul 2011	201180036639.X	103068981	
PAT903839-EG-PCT	26 Jul 2011	PCT148/2013		
PAT903839-EP-EPT	26 Jul 2011	11813031.9	2598639	
PAT903839-GC-NP	27 Jul 2011	2011/18940		
PAT903839-HK-FPR	27 Nov 2013	13113276.3	1185914	
PAT903839-IN-PCT	26 Jul 2011	1103/DELNP		
PAT903839-JP-PCT	26 Jul 2011	2013-521887	2013539456	

PAT903839-KR-PCT	26 Jul 2011	10-2013-7004590		
PAT903839-MX-PCT	26 Jul 2011	MX/a/2013/000986		
PAT903839-PH-PCT	26 Jul 2011	1-2013-500187		
PAT903839-RU-PCT	26 Jul 2011	2013102545		
PAT903839-TW-NP	27 Jul 2011	100126492	2012-19041	
PAT903839-US-DIV	27 Aug 2013	14/010749	20140031414	
PAT903839-US-NP	26 Jul 2011	13/190797	20120029051	8546349
PAT903839-US-PSP	28 Jul 2010	61/368385		
PAT903839-UY-NP	28 Jul 2010	33.533		
PAT903839-WO-PCT	26 Jul 2011	PCT/US11/045273	WO/2012/015775	
PAT903839-ZA-PCT	26 Jul 2011	2013/00531		
INTERFERING RNA DELIVERY SYSTEM AND USES THEREOF				
PAT905017-US-DIV	15 Jan 2014	14156227	2014/0194359	
PAT905017-US-NP	06 Dec 2012	13/706891	2013/0178421	
PAT905017-US-PSP	06 Jan 2012	61/583772		
PAT905017-WO-PCT	06 Dec 2012	PCT/US2012/068168	WO2013/103467	

SELF-COMPLEMENTARY AAV-MEDIATED DELIVERY OF INTERFERING RNA MOLECULES TO TREAT OR PREVENT OCULAR DISORDERS				
PAT903352-AU-PCT	01 Oct 2008	2008308784		2008308784
PAT903352-BR-PCT	01 Oct 2008	PI0817937-9		
PAT903352-CA-PCT	01 Oct 2008	2694091		
PAT903352-CN-PCT	01 Oct 2008	2008801100283	101815536A	
PAT903352-EG-PCT	01 Oct 2008	135/2010		
PAT903352-EP-EPT	01 Oct 2008	08835867.6	2192926	
PAT903352-HK-FPR	26 Nov 2010	10111005.8	1144391	
PAT903352-IN-PCT	01 Oct 2008	394KOLNP2010		
PAT903352-JP-PCT	01 Oct 2008	2010-527251	2010540564	
PAT903352-KR-PCT	01 Oct 2008	2010-7003620		
PAT903352-MX-PCT	01 Oct 2008	2010/001608		
PAT903352-PH-PCT	01 Oct 2008	1-2010-500382	1-2010-500382	1-2010-500382
PAT903352-RU-PCT	01 Oct 2008	2010117178	31	
PAT903352-US-NP	01 Oct 2008	12/243100	20090087413	
PAT903352-US-PSP	01 Oct 2007	60/976552		
PAT903352-WO-PCT	01 Oct 2008	PCT/US08/078380	WO/2009/046059	
PAT903352-ZA-PCT	01 Oct 2008	2010/00423		2010/00423

Delaware

The First State

Page 1

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE RESTATED CERTIFICATE OF "ARROWHEAD RESEARCH CORPORATION", FILED IN THIS OFFICE ON THE FIFTH DAY OF APRIL, A.D. 2016, AT 4:33 O`CLOCK P.M.

AND I DO HEREBY FURTHER CERTIFY THAT THE EFFECTIVE DATE OF THE AFORESAID RESTATED CERTIFICATE IS THE SIXTH DAY OF APRIL, A.D. 2016 AT 4:01 O`CLOCK P.M.

A FILED COPY OF THIS CERTIFICATE HAS BEEN FORWARDED TO THE KENT COUNTY RECORDER OF DEEDS.




Jeffrey W. Bullock, Secretary of State

3354811 8100
SR# 20162091608

Authentication: 202098208
Date: 04-05-16

You may verify this certificate online at corp.delaware.gov/authver.shtml

PATENT
REEL: 040246 FRAME: 0913

**AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION**

OF

**ARROWHEAD RESEARCH CORPORATION
(a Delaware corporation)**

Arrowhead Research Corporation, a corporation organized and existing under the laws of the State of Delaware (the "Corporation"), does hereby certify as follows:

(a) The name of the Corporation is Arrowhead Research Corporation. The Corporation's original Certificate of Incorporation was filed with the Secretary of State of the State of Delaware on February 13, 2001 under the Corporation's former name, InterActive Group, Inc.

(b) This Amended and Restated Certificate of Incorporation has been duly authorized and adopted by the Board of Directors of the Corporation in accordance with the provisions of Sections 242 and 245 of the General Corporation Law of the State of Delaware.

(c) Effective as of 4:01 p.m. (Eastern Time) on April 6, 2016, the Corporation's Certificate of Incorporation shall be amended and restated in its entirety to read as follows:

FIRST: The name of the corporation is Arrowhead Pharmaceuticals, Inc. (the "Corporation").

SECOND: The address of the Corporation's registered office in the State of Delaware is 2140 South Dupont Hwy, Camden, Kent County, Delaware 19934. The name of its registered agent at such address is Paracorp Incorporated.

THIRD: The purpose of the Corporation is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law of the State of Delaware (the "DGCL").

FOURTH: The total number of shares which the Corporation shall have authority to issue is 150,000,000, of which 145,000,000 shares shall be common stock, \$.001 par value ("Common Stock"), and 5,000,000 shares shall be preferred stock, \$.001 par value ("Preferred Stock"). The Board of Directors (the "Board") is authorized, subject to the limitations prescribed by law and the provisions of this Article FOURTH, to provide for the issuance of the Preferred Stock in series, and by filing a certificate pursuant to the applicable laws of the State of Delaware, to establish from time to time the number of shares to be included in each such series, and to fix the designation, powers, preferences and rights of the shares of each such series and the qualifications, limitations or restrictions thereof. The authority of the Board with respect to each such series shall include, but not be limited to, the determination of the following: (a) The number of shares constituting that series and the distinctive designation of that series; (b) The dividend rate, if any, on the shares of that series, whether dividends shall be cumulative, and, if so, from which date or dates, and the relative priority, if any, of payment of dividends on shares of that series; (c) Whether that series shall have voting rights, in addition to the voting rights expressly required by law, and, if so, the terms of such voting rights; (d) Whether that series shall have conversion privileges, and, if so, the terms and conditions of such conversion, including provisions for adjustment of the conversion rate in such events as the Board shall determine; (e) Whether or not the shares of that series shall be redeemable, and, if so, the terms and conditions of such redemption, including the date or dates upon or after which they shall be redeemable, and the amount per share payable in the case of redemption, which amount may vary under different conditions and at different redemption dates; (f) Whether that series shall have a sinking fund for the redemption or purchase of shares of that series, and, if so, the terms and amount of such sinking fund; (g) The rights of the shares of that series in the event of a voluntary or involuntary liquidation, dissolution or winding up of the Corporation, and the relative rights of priority, if any, of payment of shares of that series; and (h) Any other relative rights, preferences and limitations of that series.

Series C Convertible Preferred Stock. Pursuant to the authority conferred by this Article FOURTH upon the Board, the Board created a series of 46,000 shares of Preferred Stock designated as Series C Convertible Preferred Stock by filing a certificate of designations with the Secretary of State of the State of Delaware on October 10, 2013. The voting powers, designations, preferences and relative, participating, optional or other special rights, and the qualifications, limitations and restrictions thereof, of the Series C Convertible Preferred Stock of the Corporation are as set forth in Annex A hereto and are incorporated herein by reference.

FIFTH: The Board is expressly authorized to make, alter or repeal the Bylaws of the Corporation, but the stockholders may make additional Bylaws and may alter or repeal any bylaw whether adopted by them or otherwise.

SIXTH: Elections of directors need not be by written ballot except to the extent provided in the Bylaws of the Corporation.

SEVENTH: A director of the Corporation shall not be liable to the Corporation or any of its stockholders for monetary damages for breach of fiduciary duty as a director, except to the extent such exemption from liability or limitation thereof is not permitted under the DGCL as the same exists or may hereafter be amended. Any repeal or modification of the foregoing paragraph by the stockholders of the Corporation shall not adversely affect any right or protection of a director of the Corporation in respect of any act or omission occurring prior to the time of such repeal or modification.

EIGHTH: The Corporation reserves the right at any time and from time to time to amend, alter, change or repeal any provision contained in this Certificate of Incorporation in the manner now or hereafter prescribed by law, and all rights, preferences and privileges of whatsoever nature conferred upon stockholders, directors or any other persons whomsoever by and pursuant to this Certificate of Incorporation in its present form or as hereafter amended are granted subject to the right reserved in this Article EIGHTH.

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IN WITNESS WHEREOF, Arrowhead Research Corporation has caused this Amended and Restated Certificate of Incorporation to be signed by the undersigned duly authorized officer on this 5th day of April, 2016.

ARROWHEAD RESEARCH CORPORATION

By: /s/ Christopher Anzalone
Christopher Anzalone
President and Chief Executive Officer

ANNEX A

ARROWHEAD RESEARCH CORPORATION
CERTIFICATE OF DESIGNATION OF PREFERENCES,
RIGHTS AND LIMITATIONS
OF
SERIES C CONVERTIBLE PREFERRED STOCK

PURSUANT TO SECTION 151 OF THE
DELAWARE GENERAL CORPORATION LAW

Section 1. Definitions. For the purposes of this Annex A, the following terms shall have the following meanings:

“Affiliate” means any Person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a Person, as such terms are used in and construed under Rule 405 of the Securities Act.

“Beneficial Ownership Limitation” shall have the meaning set forth in Section 6(d).

“Business Day” means any day except any Saturday, any Sunday, any day which is a federal legal holiday in the United States or any day on which banking institutions in the State of New York are authorized or required by law or other governmental action to close.

“Buy-In” shall have the meaning set forth in Section 6(c)(iv).

“Commission” means the United States Securities and Exchange Commission.

“Common Stock” means the Corporation’s common stock, par value \$0.001 per share, and stock of any other class of securities into which such securities may be reclassified or changed after October 10, 2013.

“Common Stock Equivalents” means any securities of the Corporation or the Subsidiaries which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, rights, options, warrants or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock.

“Conversion Amount” means the sum of the Stated Value at issue.

“Conversion Date” shall have the meaning set forth in Section 6(a).

“Conversion Price” shall have the meaning set forth in Section 6(b).

“Conversion Shares” means, collectively, the shares of Common Stock issuable upon conversion of the shares of Series C Preferred Stock in accordance with the terms hereof.

“Distribution” shall have the meaning set forth in Section 7(c).

“Effective Date” means the date that the Resale Registration Statement filed by the Corporation pursuant to the Purchase Agreement first becomes effective under the Securities Act.

“Exchange Act” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

“Fundamental Transaction” shall have the meaning set forth in Section 7(d).

“Holder” shall have the meaning given such term in Section 2.

“Junior Securities” means the Common Stock and all other Common Stock Equivalents of the Corporation other than those securities which are explicitly senior or pari passu to the Series C Preferred Stock in dividend rights or liquidation preference.

“Liquidation” shall have the meaning set forth in Section 5.

“New York Courts” shall have the meaning set forth in Section 8(d).

“Notice of Conversion” shall have the meaning set forth in Section 6(a).

“Original Issue Date” means the date of the first issuance of any shares of the Series C Preferred Stock regardless of the number of transfers of any particular shares of Series C Preferred Stock and regardless of the number of certificates which may be issued to evidence such Series C Preferred Stock.

“Person” means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.

“Purchase Agreement” means the Securities Purchase Agreement, dated October 8, 2013, among the Corporation and the original Holders, as amended, modified or supplemented from time to time in accordance with its terms.

“Reference Property” shall have the meaning set forth in Section 7(d).

“Reference Property Units” shall have the meaning set forth in Section 7(d).

“Resale Registration Statement” means a registration statement that registers the resale of the Conversion Shares of the Holders, who shall be named as “selling stockholders” therein and meets the requirements of the Purchase Agreement.

“Securities Act” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

“Series C Preferred Stock” shall have the meaning set forth in Section 2.

“Share Delivery Date” shall have the meaning set forth in Section 6(c)(i).

“Stated Value” shall have the meaning set forth in Section 2.

“Subsidiary” means any Subsidiary of the Corporation as defined in the Purchase Agreement and shall, where applicable, also include any direct or indirect subsidiary of the Corporation formed or acquired after the date of the Purchase Agreement.

“Successor Entity” shall have the meaning set forth in Section 7(d).

“Trading Day” means a day on which the principal Trading Market is open for business.

“Trading Market” means any of the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE MKT, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, the New York Stock Exchange or the OTC Bulletin Board (or any successors to any of the foregoing).

“Transaction Documents” means the Purchase Agreement, this Certificate of Designation and all exhibits and schedules thereto and hereto and any other documents or agreements executed in connection with the transactions contemplated hereunder.

“Transfer Agent” means Computershare Trust Company, N.A., the current transfer agent for the Common Stock, and any successor transfer agent of the Corporation.

Section 2. Designation, Amount and Par Value. The series of preferred stock shall be designated as the Corporation’s Series C Convertible Preferred Stock (the “Series C Preferred Stock”) and the number of shares so designated shall be 46,000 (which shall not be subject to increase without the written consent of a majority of the holders of the Series C Preferred Stock (each, a “Holder” and collectively, the “Holders”). Each share of Series C Preferred Stock shall have a par value of \$0.001 per share and a stated value equal to \$1,000 (the “Stated Value”).

Section 3. Dividends; Restrictions on Repurchases and Redemptions of Junior Securities: No Redemption.

a) Dividends. Holders shall be entitled to receive, and the Corporation shall pay, dividends on shares of Series C Preferred Stock equal (on an as-if-converted-to-Common-Stock basis, without regard to any limitation in Section 6(d) on the conversion of the Series C Preferred Stock) to and in the same form, and in the same manner, as dividends (other than dividends in the form of Common Stock) actually paid on shares of the Common Stock when, as and if such dividends (other than dividends in the form of Common Stock) are paid on shares of the Common Stock. Other than as set forth in the previous sentence, no other dividends shall be paid on shares of Series C Preferred Stock; and the Corporation shall pay no dividends (other than dividends in the form of Common Stock) on shares of the Common Stock unless it simultaneously complies with the previous sentence.

b) Repurchases and Redemptions of Junior Securities. So long as any Series C Preferred Stock shall remain outstanding, the Corporation shall not redeem, purchase or otherwise acquire directly or indirectly more than a de minimis amount of any Junior Securities other than as to repurchases of Common Stock or Common Stock Equivalents from departing, officers, directors or employees of the Company or any Subsidiary, and provided that, while any of the Series C Preferred Stock remains outstanding, such repurchases shall not exceed an aggregate of \$100,000 in any fiscal year.

c) No Redemption. The Series C Preferred Stock shall not be redeemable at the election of the Corporation.

Section 4. Voting Rights. In addition to the voting rights provided by applicable law, the Series C Preferred Stock shall have the right to vote on any matter on which the Common Stock is eligible to vote on an as-if-converted-to-Common-Stock basis; provided that each Holder shall only have the right to vote such shares of Series C Preferred Stock as are eligible for conversion without exceeding the Beneficial Ownership Limitation.

Section 5. Liquidation. Upon any liquidation, dissolution or winding-up of the Corporation, whether voluntary or involuntary (a “Liquidation”), after the satisfaction in full of the debts of the Corporation and the payment of any liquidation preference owed to the holders of shares of capital stock of the Corporation ranking prior to the Series C Preferred Stock upon liquidation, the Holders of the Series C Preferred Stock shall participate pari passu with the holders of the Common Stock (on an as-if-converted-to-

Common-Stock basis without regard to any limitation in Section 6(d) on the conversion of the Series C Preferred Stock) in the net assets of the Corporation. The Corporation shall mail written notice of any such Liquidation, not less than 45 days prior to the payment date stated therein, to each Holder.

Section 6. Conversion.

a) Conversions at Option of Holder. Each share of Series C Preferred Stock shall be convertible, at any time and from time to time from and after the Original Issue Date at the option of the Holder thereof, into that number of shares of Common Stock (subject to the limitations set forth in Section 6(d)) determined by dividing the Stated Value of such share of Series C Preferred Stock by the Conversion Price in effect on the Conversion Date for such conversion, subject to Section 6(c)(vi). Holders shall effect conversions by providing the Corporation with the form of conversion notice attached hereto as Exhibit A (a "Notice of Conversion"). Each Notice of Conversion shall specify the number of shares of Series C Preferred Stock to be converted, the number of shares of Series C Preferred Stock owned prior to the conversion at issue, the number of shares of Series C Preferred Stock owned subsequent to the conversion at issue and the date on which such conversion is to be effected, which date may not be prior to the date the applicable Holder delivers (as provided in Section 8(a)) such Notice of Conversion to the Corporation (such date, the "Conversion Date"). If no Conversion Date is specified in a Notice of Conversion, the Conversion Date shall be the date that such Notice of Conversion to the Corporation is deemed delivered hereunder. The calculations and entries set forth in the Notice of Conversion shall control in the absence of manifest or mathematical error. No ink-original Notice of Conversion shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Conversion form be required. To effect conversions of shares of Series C Preferred Stock, a Holder shall not be required to surrender the certificate(s) representing the shares of Series C Preferred Stock to the Corporation unless all of the shares of Series C Preferred Stock represented thereby are so converted, in which case such Holder shall deliver the certificate representing such shares of Series C Preferred Stock promptly following the Conversion Date at issue. Shares of Series C Preferred Stock converted into Common Stock in accordance with the terms hereof or repurchased by the Corporation shall be canceled and shall not be reissued.

b) Conversion Price. The conversion price for the Series C Preferred Stock shall initially equal \$5.86, subject to adjustment as provided herein (the "Conversion Price").

c) Mechanics of Conversion

i. Delivery of Certificate Upon Conversion. Not later than three (3) Trading Days after each Conversion Date (the "Share Delivery Date"), the Corporation shall deliver, or cause to be delivered, to the converting Holder a certificate or certificates representing the applicable Conversion Shares which, on or after the earlier of (i) the one-year anniversary of the Original Issue Date or (ii) the Effective Date, shall be free of restrictive legends and trading restrictions (other than those which may then be required by the Purchase Agreement) representing the number of Conversion Shares being acquired upon the conversion of the Series C Preferred Stock. Subject to clauses (ii) and (iv)(B) below, on the Conversion Date with respect to any Conversion Shares, the Person to which such Conversion Shares are to be issued shall be deemed to be the holder of record of such Conversion Shares; provided, however, that, subject to clauses (ii) and (iv)(B) below, if such Conversion Date occurs after a record date for the payment of dividends on the Series C Preferred Stock pursuant to Section 3(a) and prior to the related dividend payment date, then such Person shall be deemed to have been the holder of record of such Conversion Shares on such record date (and, for the avoidance of doubt, will be entitled to receive such dividends in respect of such Conversion Shares on such dividend payment date). On or after the earlier of (i) the one-year anniversary of the Original Issue Date or (ii) the Effective Date, the Corporation shall use its best efforts to deliver any certificate or certificates required to be delivered by the Corporation under this Section 6 electronically

through the Depository Trust Company or another established clearing corporation performing similar functions.

ii. Failure to Deliver Certificates. If, in the case of any Notice of Conversion, such certificate or certificates are not delivered to or as directed by the applicable Holder by the Share Delivery Date, the Holder shall be entitled to elect by written notice to the Corporation at any time on or before its receipt of such certificate or certificates, to rescind such Conversion, in which event the Corporation shall promptly return to the Holder any original Series C Preferred Stock certificate delivered to the Corporation.

iii. Obligation Absolute. The Corporation's obligation to issue and deliver the Conversion Shares upon conversion of Series C Preferred Stock in accordance with the terms hereof are absolute and unconditional, irrespective of any action or inaction by a Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any Person or any action to enforce the same, or any setoff, counterclaim, recoupment, limitation or termination, or any breach or alleged breach by such Holder or any other Person of any obligation to the Corporation or any violation or alleged violation of law by such Holder or any other person, and irrespective of any other circumstance which might otherwise limit such obligation of the Corporation to such Holder in connection with the issuance of such Conversion Shares; provided, however, that such delivery shall not operate as a waiver by the Corporation of any such action that the Corporation may have against such Holder. In the event a Holder shall elect to convert any or all of the Stated Value of its Series C Preferred Stock, the Corporation may not refuse conversion based on any claim that such Holder or anyone associated or affiliated with such Holder has been engaged in any violation of law or agreement or for any other reason, unless an injunction from a court, on notice to Holder, restraining and/or enjoining conversion of all or part of the Series C Preferred Stock of such Holder shall have been sought and obtained, and the Corporation posts a surety bond for the benefit of such Holder in the amount of 150% of the Stated Value of Series C Preferred Stock which is subject to the injunction, which bond shall remain in effect until the completion of arbitration/litigation of the underlying dispute and the proceeds of which shall be payable to such Holder to the extent it obtains judgment. In the absence of such injunction, the Corporation shall issue Conversion Shares and, if applicable, cash, upon a properly noticed conversion. Nothing herein shall limit a Holder's right to pursue all remedies available to it hereunder, at law or in equity, including, without limitation, a decree of specific performance and/or injunctive relief. The exercise of any such rights shall not prohibit a Holder from seeking to enforce damages pursuant to any other Section hereof or under applicable law.

iv. Compensation for Buy-In on Failure to Timely Deliver Certificates Upon Conversion. In addition to any other rights available to the Holder, if the Corporation fails for any reason to deliver to a Holder the applicable certificate or certificates by the Share Delivery Date pursuant to Section 6(c)(i), and if on or after such Share Delivery Date such Holder is required by its brokerage firm to purchase (in an open market transaction or otherwise), or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by such Holder of the Conversion Shares which such Holder was entitled to receive upon the conversion relating to such Share Delivery Date (a "Buy-In"), then the Corporation shall (A) pay in cash to such Holder (in addition to any other remedies available to or elected by such Holder) the amount, if any, by which (x) such Holder's total purchase price (or, in the case of a purchase by such brokerage firm, the cost charged by such brokerage firm to such Holder with respect thereto) (including any brokerage commissions) for the Common Stock so purchased exceeds (y) the product of (1) the aggregate number of shares of Common Stock that such Holder was entitled to receive from the conversion at issue and which was the subject of such sale multiplied by (2) the actual sale price at which the sell order giving rise to such purchase obligation was

executed (including any brokerage commissions) and (B) at the option of such Holder, either reissue (if surrendered) the shares of Series C Preferred Stock equal to the number of shares of Series C Preferred Stock submitted for conversion (in which case, such conversion shall be deemed rescinded) or deliver to such Holder the number of shares of Common Stock that would have been issued if the Corporation had timely complied with its delivery requirements under Section 6(c)(i). For example, if a Holder purchases shares of Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted conversion of shares of Series C Preferred Stock with respect to which the actual sale price of the Conversion Shares (including any brokerage commissions) giving rise to such purchase obligation was a total of \$10,000 under clause (A) of the immediately preceding sentence, the Corporation shall be required to pay such Holder \$1,000. The Holder shall provide the Corporation written notice indicating the amounts payable to such Holder in respect of the Buy-In and, upon request of the Corporation, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Corporation's failure to timely deliver certificates representing shares of Common Stock upon conversion of the shares of Series C Preferred Stock as required pursuant to the terms hereof.

v. Reservation of Shares Issuable Upon Conversion. The Corporation covenants that it will at all times reserve and keep available out of its authorized and unissued shares of Common Stock for the sole purpose of issuance upon conversion of the Series C Preferred Stock, as herein provided, free from preemptive rights or any other actual contingent purchase rights of Persons other than the Holder (and the other Holders of the Series C Preferred Stock), not less than such aggregate number of shares of the Common Stock as shall (subject to the terms and conditions set forth herein) be issuable (taking into account the adjustments and restrictions of Section 7) upon the conversion of the then-outstanding shares of Series C Preferred Stock. The Corporation covenants that all shares of Common Stock that shall be so issuable shall, upon issue, be duly authorized, validly issued, fully paid and nonassessable and, if the Resale Registration Statement is then effective under the Securities Act, shall be registered for public resale in accordance with such Resale Registration Statement (subject to such Holder's compliance with its related obligations under the Purchase Agreement).

vi. Fractional Shares. No fractional shares or scrip representing fractional shares of Common Stock shall be issued upon the conversion of the Series C Preferred Stock. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such conversion, the Corporation shall at its election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Conversion Price in effect on the relevant Conversion Date or round up to the next whole share.

vii. Transfer Taxes and Expenses. The issuance of certificates for shares of the Common Stock upon conversion of the Series C Preferred Stock shall be made without charge to any Holder for any documentary stamp or similar taxes that may be payable in respect of the issue or delivery of such certificates, provided that the Corporation shall not be required to pay any tax that may be payable in respect of any transfer involved in the issuance and delivery of any such certificate upon conversion in a name other than that of the Holders of such Series C Preferred Stock and the Corporation shall not be required to issue or deliver such certificates unless or until the Person or Persons requesting the issuance thereof shall have paid to the Corporation the amount of such tax or shall have established to the satisfaction of the Corporation that such tax has been paid. The Company shall pay all Transfer Agent fees required for same-day processing of any Notice of Conversion.

d) Beneficial Ownership Limitation. Notwithstanding anything herein to the contrary, the Corporation shall not effect any conversion of the Series C Preferred Stock, and a Holder shall not have the right to convert any portion of the Series C Preferred Stock, in each case to the extent that, after giving effect to such conversion, such Holder would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of this Section 6(d), beneficial ownership of a Holder shall be calculated in accordance with Section 16(a) and (b) of the Exchange Act and the rules and regulations promulgated thereunder for purposes of determining whether such Holder is subject to the reporting and liability provisions of Section 16(a) and 16(b) of the Exchange Act. For purposes of complying with this Section 6(d), the Corporation shall be entitled to conclusively rely on the information set forth in any Holder's Notice of Conversion, and each Holder delivering a Notice of Conversion shall be deemed to represent to the Corporation that such Notice of Conversion does not violate the restrictions set forth in this paragraph, and the Corporation shall have no obligation to verify or confirm the accuracy of such representation. Upon the written or oral request of a Holder, the Corporation shall, within two Trading Days, confirm orally and in writing to such Holder the number of shares of Common Stock then outstanding. The "Beneficial Ownership Limitation" shall be 9.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon conversion of Series C Preferred Stock held by the applicable Holder. By written notice to the Company, a Purchaser may from time to time increase or decrease the Beneficial Ownership Limitation applicable solely to such Purchaser to any other percentage not in excess of 19.99% specified in such notice; provided that any such increase will not be effective until the sixty-fifth (65th) day after such notice is delivered to the Company. The express purpose of this Section 6(d) is to preclude any Holder's ownership of any shares of Series C Preferred Stock from causing such Holder to become subject to the reporting and liability provisions of Section 16(a) and 16(b) of the Exchange Act, including pursuant to Rule 16a-2 promulgated by the Commission, and this Section 6(d) shall be interpreted according to such express purpose. Solely for purposes of this Section 6(d) and for purposes of the provisos to Section 7(b) and (c) hereof, the term "Holder" shall include all persons whose beneficial ownership of the Common Stock is aggregated pursuant to Section 13(d)(3) of the Exchange Act or Rule 13d-5 thereunder.

Section 7. Certain Adjustments: Rights of Holders Upon Certain Dividends, Distributions or Fundamental Transactions.

a) Stock Dividends and Stock Splits. If the Corporation, at any time while any Series C Preferred Stock is outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions payable in shares of Common Stock on shares of Common Stock, (ii) subdivides outstanding shares of Common Stock into a larger number of shares or (iii) combines (including by way of a reverse stock split) outstanding shares of Common Stock into a smaller number of shares, then the Conversion Price shall be adjusted to equal adjustment multiplied by a fraction of which the numerator shall be the number of shares of Common an amount equal to such Conversion Price immediately before such Stock outstanding immediately before giving effect to such event, and of which the denominator shall be the number of shares of Common Stock outstanding immediately after giving effect to such event. Any adjustment made pursuant to this Section 7(a) shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision or combination, as applicable.

b) Subsequent Rights Offerings. In addition to any adjustments pursuant to Section 7(a) above, if at any time the Corporation grants, issues or sells any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of shares of Common Stock (the "Purchase Rights"), then, without duplication of any dividends to be due on Series C Preferred Stock pursuant to Section 3(a), each Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if such Holder had held the number of shares of Common Stock acquirable upon conversion of such Holder's Series C Preferred Stock (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership

Limitation) on the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the grant, issue or sale of such Purchase Rights; provided, however, that, to the extent that any Holder's right to participate in any such Purchase Right would result in the Holder exceeding the Beneficial Ownership Limitation, then the Purchase Rights to which such Holder is entitled pursuant hereto shall be limited to the same extent provided in Section 6(d) hereof.

c) Pro Rata Distributions. During such time as the Series C Preferred Stock is outstanding, if the Corporation declares or makes any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a "Distribution"), at any time after the issuance of the Series C Preferred Stock, then, in each such case, without duplication of any dividends to be due on Series C Preferred Stock pursuant to Section 3(a), each Holder shall be entitled to participate in such Distribution to the same extent that such Holder would have participated therein if such Holder had held the number of shares of Common Stock acquirable upon complete Conversion of the Series C Preferred Stock (without regard to any limitations on Conversion hereof, including without limitation, the Beneficial Ownership Limitation) on the date of which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution; provided, however, that, to the extent that any Holder's right to participate in any such Distribution would result in the Holder exceeding the Beneficial Ownership Limitation, then the rights appurtenant to such securities, property or options to which such Holder is entitled pursuant hereto shall be limited to the same extent provided in Section 6(d) hereof.

d) Fundamental Transaction. If, at any time while the Series C Preferred Stock is outstanding, (i) the Corporation, directly or indirectly, in one or more related transactions is a party to any merger or consolidation of the Corporation, (ii) the Corporation, directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Corporation or another Person) is completed, (iv) the Corporation, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the Common Stock or any compulsory share exchange, in each case pursuant to which the Common Stock is converted into, exchanged for or represents solely the right to receive, other securities, cash or property, or any combination thereof (such other securities, cash or property, or combination thereof, the "Reference Property," and the amount and kind of Reference Property that a holder of one share of Common Stock would be entitled to receive on account of such transaction, a "Reference Property Unit") (each such transaction, a "Fundamental Transaction"), then, notwithstanding anything to the contrary herein, (I) at the effective time of such Fundamental Transaction, the Conversion Shares due upon conversion of any Series C Preferred Stock shall be determined in the same manner as if each reference to any number of shares of Common Stock in this Certificate of Designation were instead a reference to the same number of Reference Property Units and (II) if such Reference Property Unit consists of any security of a Person other than the Corporation, then such Person (and, as a condition to the Corporation effecting such Fundamental Transaction, the Corporation shall ensure that such Person) shall execute such instruments as shall be necessary to give effect to this Section 7(d). If holders of Common Stock are given any choice as to the securities, cash or property to be received in such Fundamental Transaction, then each Holder shall be given the same choice as to the Reference Property Unit it receives upon any conversion of the Series C Preferred Stock following such Fundamental Transaction. To the extent necessary to effectuate the foregoing provisions, any successor to the Corporation or surviving entity in such Fundamental Transaction shall file a new Certificate of Designation with the same terms and conditions and issue to the Holders new preferred stock consistent with the foregoing provisions and evidencing the Holders' right to convert such preferred stock into Reference Property Units. The Corporation shall cause any successor entity in a

Fundamental Transaction in which the Corporation is not the survivor (the “Successor Entity”) to assume in writing all of the obligations of the Corporation under this Certificate of Designation and the other Transaction Documents in accordance with the provisions of this Section 7(d) pursuant to written agreements in form and substance reasonably satisfactory to the Holders and approved by the Holders (without unreasonable delay) prior to such Fundamental Transaction and shall, at the option of the Holders, deliver to the Holder in exchange for the Series C Preferred Stock a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to the Series C Preferred Stock which is convertible in accordance with this Section 7(d), and which is reasonably satisfactory in form and substance to the Holders. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall succeed to, and, except in the case of a lease, be substituted for (so that from and after the date of such Fundamental Transaction, the provisions of this Certificate of Designation and the other Transaction Documents referring to the “Corporation” shall refer instead to the Successor Entity), and may exercise every right and power of the Corporation and shall assume all of the obligations of the Corporation under this Certificate of Designation and the other Transaction Documents with the same effect as if such Successor Entity had been named as the Corporation herein.

e) Calculations. All calculations under this Section 7 shall be made to the nearest cent or the nearest 1/100th of a share, as the case may be. For purposes of this Section 7, the number of shares of Common Stock deemed to be issued and outstanding as of a given date shall be the sum of the number of shares of Common Stock (excluding any treasury shares of the Corporation) issued and outstanding.

f) Notice to the Holders.

i. Adjustment to Conversion Price. Whenever the Conversion Price is adjusted pursuant to any provision of this Section 7, the Corporation shall promptly deliver to each Holder a notice setting forth the Conversion Price after such adjustment and setting forth a brief statement of the facts requiring such adjustment.

ii. Notice to Allow Conversion by Holder. If (A) the Corporation shall declare a dividend (or any other distribution in whatever form) on the Common Stock, (B) the Corporation shall declare a special nonrecurring cash dividend on or a redemption of the Common Stock, (C) the Corporation shall authorize the granting to all holders of the Common Stock of rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any rights, (D) the approval of any stockholders of the Corporation shall be required in connection with any reclassification of the Common Stock, any consolidation or merger to which the Corporation is a party, any sale or transfer of all or substantially all of the assets of the Corporation, or any compulsory share exchange whereby the Common Stock is converted into other securities, cash or property or (E) the Corporation shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Corporation, then, in each case, the Corporation shall cause to be filed at each office or agency maintained for the purpose of conversion of the Series C Preferred Stock, and shall cause to be delivered to each Holder at its last address as it shall appear upon the stock books of the Corporation, at least twenty (20) calendar days prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, sale, transfer, share exchange, dissolution, liquidation or winding up is expected to become effective or close, and the date as of which it is expected that holders of the Common Stock of record shall be entitled to exchange their shares of the Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer, share exchange, dissolution, liquidation or winding up, provided that the failure to deliver such notice or any defect therein or in the delivery

thereof shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided hereunder constitutes, or contains, material non-public information regarding the Corporation or any of the Subsidiaries, the Corporation shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. For the avoidance of doubt, notwithstanding such notice or corporate event, each Holder shall remain entitled to convert the Conversion Amount of its Series C Preferred Stock (or any part hereof) as provided herein.

Section 8. Miscellaneous.

a) Notices. Any and all notices or other communications or deliveries to be provided by the Holders hereunder, including, without limitation, any Notice of Conversion, shall be in writing and delivered personally, by facsimile or other electronic delivery, or sent by a nationally recognized overnight courier service, addressed to the Corporation, at the address set forth above Attention: Corporate Secretary, facsimile number (626) 304-3401, or such other facsimile number or address as the Corporation may specify for such purposes by notice to the Holders delivered in accordance with this Section 8(a). Any and all notices or other communications or deliveries to be provided by the Corporation hereunder shall be in writing and delivered personally, by facsimile or other electronic delivery, or sent by a nationally recognized overnight courier service addressed to each Holder at the facsimile number or address of such Holder appearing on the books of the Corporation, or if no such facsimile number or address appears on the books of the Corporation, at the principal place of business of such Holder, as set forth in the Purchase Agreement. Any notice or other communication or deliveries hereunder shall be deemed given and effective on the earliest of (i) the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number set forth in this Section prior to 5:30 p.m. (New York City time) on any date, (ii) the next Trading Day after the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number set forth in this Section on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (iii) the second Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given.

b) Absolute Obligation. Except as expressly provided herein, no provision of this Certificate of Designation shall alter or impair the obligation of the Corporation, which is absolute and unconditional, to pay liquidated damages, accrued dividends and accrued interest, as applicable, on the shares of Series C Preferred Stock at the time, place, and rate, and in the coin or currency, herein or in the Purchase Agreement prescribed.

c) Lost or Mutilated Series C Preferred Stock Certificate. If a Holder's Series C Preferred Stock certificate shall be mutilated, lost, stolen or destroyed, the Corporation shall execute and deliver, in exchange and substitution for and upon cancellation of a mutilated certificate, or in lieu of or in substitution for a lost, stolen or destroyed certificate, a new certificate for the shares of Series C Preferred Stock so mutilated, lost, stolen or destroyed, but only upon receipt of evidence of such loss, theft or destruction of such certificate, and of the ownership thereof, reasonably satisfactory to the Corporation.

d) Governing Law. All questions concerning the construction, validity, enforcement and interpretation of this Certificate of Designation shall be governed by and construed and enforced in accordance with the internal laws of the State of Delaware, without regard to the principles of conflict of laws thereof. Each party agrees that all legal proceedings concerning the interpretation, enforcement and defense of the transactions contemplated by any of the Transaction Documents (whether brought against a party hereto or its respective Affiliates, directors, officers, shareholders, employees or agents) shall be commenced in the state and federal courts sitting in the City of New York, Borough of Manhattan (the "New York Courts"). Each party hereto hereby irrevocably submits to the exclusive jurisdiction of the New York Courts for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein (including with respect to the enforcement of any of the Transaction Documents), and hereby

irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of such New York Courts, or such New York Courts are improper or inconvenient venue for such proceeding. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Certificate of Designation and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by applicable law. Each party hereto hereby irrevocably waives, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to this Certificate of Designation or the transactions contemplated hereby. If any party shall commence an action or proceeding to enforce any provisions of this Certificate of Designation, then the prevailing party in such action or proceeding shall be reimbursed by the other party for its attorneys' fees and other costs and expenses incurred in the investigation, preparation and prosecution of such action or proceeding.

e) Waiver. Any waiver by the Corporation or a Holder of a breach of any provision of this Certificate of Designation shall not operate as or be construed to be a waiver of any other breach of such provision or of any breach of any other provision of this Certificate of Designation or a waiver by any other Holders. The failure of the Corporation or a Holder to insist upon strict adherence to any term of this Certificate of Designation on one or more occasions shall not be considered a waiver or deprive that party (or any other Holder) of the right thereafter to insist upon strict adherence to that term or any other term of this Certificate of Designation on any other occasion. Any waiver by the Corporation or a Holder must be in writing.

f) Severability. If any provision of this Certificate of Designation is invalid, illegal or unenforceable, the balance of this Certificate of Designation shall remain in effect, and if any provision is inapplicable to any Person or circumstance, it shall nevertheless remain applicable to all other Persons and circumstances. If it shall be found that any interest or other amount deemed interest due hereunder violates the applicable law governing usury, the applicable rate of interest due hereunder shall automatically be lowered to equal the maximum rate of interest permitted under applicable law.

g) Next Business Day. Whenever any payment or other obligation hereunder shall be due on a day other than a Business Day, such payment shall be made on the next succeeding Business Day.

h) Headings. The headings contained herein are for convenience only, do not constitute a part of this Certificate of Designation and shall not be deemed to limit or affect any of the provisions hereof.

i) Status of Converted or Reacquired Series C Preferred Stock. Shares of Series C Preferred Stock may only be issued pursuant to the Purchase Agreement. If any shares of Series C Preferred Stock shall be converted or reacquired by the Corporation, such shares shall resume the status of authorized but unissued shares of preferred stock and shall no longer be designated as Series C Convertible Preferred Stock.

EXHIBIT A

NOTICE OF CONVERSION

(TO BE EXECUTED BY THE REGISTERED HOLDER IN ORDER TO CONVERT SHARES OF SERIES C PREFERRED STOCK)

The undersigned hereby elects to convert the number of shares of Series C Convertible Preferred Stock indicated below into shares of common stock, par value \$0.001 per share (the "Common Stock"), of Arrowhead Research Corporation, a Delaware corporation (the "Corporation"), according to the conditions hereof, as of the date written below. If shares of Common Stock are to be issued in the name of a Person other than the undersigned, the undersigned will pay all transfer taxes payable with respect thereto and is delivering herewith such certificates and opinions as may be required by the Corporation in accordance with the Purchase Agreement. No fee will be charged to the Holders for any conversion, except for any such transfer taxes.

Conversion calculations:

Date to Effect Conversion: _____

Number of shares of Series C Preferred Stock owned prior to Conversion: _____

Number of shares of Series C Preferred Stock to be Converted: _____

Stated Value of shares of Series C Preferred Stock to be Converted: _____

Number of shares of Common Stock to be Issued: _____

Applicable Conversion Price: _____

Number of shares of Series C Preferred Stock subsequent to Conversion: _____

Address for Delivery: _____

or

DWAC Instructions:

Broker no: _____

Account no: _____

[HOLDER]

By: _____

Name:

Title: