

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

EPAS ID: PAT3675884

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

**CONVEYING PARTY DATA**

Name	Execution Date
EDGE BIOSYSTEMS, INC.	12/23/2015
ANATRACE PRODUCTS, LLC	12/23/2015

**RECEIVING PARTY DATA**

<b>Name:</b>	FIDUS MEZZANINE CAPITAL, L.P.
<b>Street Address:</b>	1603 ORRINGTON AVENUE, SUITE 1005
<b>City:</b>	EVANSTON
<b>State/Country:</b>	ILLINOIS
<b>Postal Code:</b>	60201

**PROPERTY NUMBERS Total: 17**

Property Type	Number
Patent Number:	9206221
Application Number:	13961757
Patent Number:	8263754
Patent Number:	6492501
Patent Number:	8609602
Patent Number:	8652417
Patent Number:	8530631
Patent Number:	8846899
Patent Number:	8877906
Patent Number:	8986449
Patent Number:	6172262
Patent Number:	8071759
Patent Number:	5763586
Patent Number:	5674987
Patent Number:	6504021
Patent Number:	6093558
Application Number:	29331700

**CORRESPONDENCE DATA**

**Fax Number:**

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

**Phone:** 7043778156  
**Email:** jcarusone@rbh.com  
**Correspondent Name:** JENNIFER CARUSONE  
**Address Line 1:** 101 N. TRYON STREET, SUITE 1900  
**Address Line 4:** CHARLOTTE, NORTH CAROLINA 28246

<b>ATTORNEY DOCKET NUMBER:</b>	18865.00073
<b>NAME OF SUBMITTER:</b>	JENNIFER CARUSONE
<b>SIGNATURE:</b>	/Jennifer Carusone/
<b>DATE SIGNED:</b>	12/30/2015

**Total Attachments: 8**

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## PATENT SECURITY AGREEMENT

This **PATENT SECURITY AGREEMENT** (this "*Patent Security Agreement*") is made this 23rd day of December, 2015, by and among the Grantors listed on the signature pages hereof (collectively, jointly and severally, "*Grantors*" and each individually "*Grantor*"), and **FIDUS MEZZANINE CAPITAL, L.P.**, a Delaware limited partnership ("*Lender*").

### WITNESSETH:

**WHEREAS**, pursuant to that certain Senior Subordinated Credit Agreement dated as of December 23, 2015 (as amended, restated, supplemented, or otherwise modified from time to time, the "*Credit Agreement*") by and among by and among **EDGE BIOSYSTEMS, INC.**, a Maryland corporation ("*EdgeBio*"), **ANATRACE PRODUCTS, LLC**, a Delaware limited liability company ("*Anatrace*" which together with EdgeBio and any additional direct or indirect Subsidiaries of EdgeBio, Anatrace or any IntermediateCo, hereafter acquired or formed, which become party to the Credit Agreement by executing an Addendum, are sometimes collectively referred to herein as "*Borrowers*" and each individually as a "*Borrower*"), and Lender, Lender agreed to make certain financial accommodations available to Borrowers from time to time pursuant to the terms and conditions thereof; and

**WHEREAS**, Lender is willing to make the financial accommodations to Borrowers as provided for in the Credit Agreement, but only upon the condition, among others, that Grantors shall have executed and delivered to Lender that certain Security Agreement, dated as of even date with the Credit Agreement (including all annexes, exhibits or schedules thereto, as from time to time amended, restated, supplemented or otherwise modified, the "*Security Agreement*"); and

**WHEREAS**, pursuant to the Security Agreement, Grantors are required to execute and deliver to Lender this Patent Security Agreement;

**NOW, THEREFORE**, in consideration of the premises and mutual covenants herein contained and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, each Grantor hereby agrees as follows:

1. **DEFINED TERMS.** All initially capitalized terms used but not otherwise defined herein have the meanings given to them in the Security Agreement or, if not defined therein, in the Credit Agreement.

2. **GRANT OF SECURITY INTEREST IN PATENT COLLATERAL.** Each Grantor hereby unconditionally grants, assigns, and pledges to Lender to secure the Secured Obligations, a continuing security interest (referred to in this Patent Security Agreement as the "*Security Interest*") in all of such Grantor's right, title and interest in and to the following, whether now owned or hereafter acquired or arising (collectively, the "*Patent Collateral*"):

- (a) all of its Patents including those referred to on Schedule I;

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

(c) all products and proceeds of the foregoing, including any claim by such Grantor against third parties for past, present or future infringement of any Patent.

3. **SECURITY FOR SECURED OBLIGATIONS.** This Patent Security Agreement and the Security Interest created hereby secures the payment and performance of the Secured Obligations, whether now existing or arising hereafter. Without limiting the generality of the foregoing, this Patent Security Agreement secures the payment of all amounts which constitute part of the Secured Obligations and would be owed by Grantors, or any of them, to Lender, whether or not they are unenforceable or not allowable due to the existence of an Insolvency Proceeding involving any Grantor.

4. **SECURITY AGREEMENT.** The Security Interest granted pursuant to this Patent Security Agreement is granted in conjunction with the security interests granted to Lender pursuant to the Security Agreement. Each Grantor hereby acknowledges and affirms that the rights and remedies of Lender with respect to the Security Interest in the Patent Collateral made and granted hereby are more fully set forth in the Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein. To the extent there is any inconsistency between this Patent Security Agreement and the Security Agreement, the Security Agreement shall control.

5. **AUTHORIZATION TO SUPPLEMENT.** If any Grantor shall obtain rights to any new patent application or issued patent or become entitled to the benefit of any patent application or patent for any divisional, continuation, continuation-in-part, reissue, or reexamination of any existing patent or patent application, the provisions of this Patent Security Agreement shall automatically apply thereto. Grantors shall give prompt notice in writing to Lender with respect to any such new patent rights. Without limiting Grantors' obligations under this Section, Grantors hereby authorize Lender unilaterally to modify this Patent Security Agreement by amending Schedule I to include any such new patent rights of each Grantor. Notwithstanding the foregoing, no failure to so modify this Patent Security Agreement or amend Schedule I shall in any way affect, invalidate or detract from Lender's continuing security interest in all Collateral, whether or not listed on Schedule I.

6. **COUNTERPARTS.** This Patent Security Agreement may be executed in any number of counterparts and by different parties on separate counterparts, each of which, when executed and delivered, shall be deemed to be an original, and all of which, when taken together, shall constitute but one and the same Patent Security Agreement. Delivery of an executed counterpart of this Patent Security Agreement by telefacsimile or other electronic method of transmission shall be equally as effective as delivery of an original executed counterpart of this Patent Security Agreement. Any party delivering an executed counterpart of this Patent Security Agreement by telefacsimile or other electronic method of transmission also shall deliver an original executed counterpart of this Patent Security Agreement but the failure to deliver an original executed counterpart shall not affect the validity, enforceability, and binding effect of this Patent Security Agreement.

7. **INTERCREDITOR AGREEMENT.** Notwithstanding anything herein to the contrary, the obligations evidenced by this Patent Security Agreement and the other Loan Documents, the Liens and security interests granted to Lender pursuant to the terms hereof and thereof and the exercise of any right or remedy by Lender hereunder or thereunder are subject to the provisions of the Intercreditor Agreement. In the event of any conflict between the terms of the Intercreditor Agreement and any other Loan Document, the terms of the Intercreditor Agreement shall govern. Notwithstanding anything that may be contained herein to the contrary, all of the provisions of the Loan Documents, including without limitation, the covenants of the Grantors contained herein and therein and all of the rights, remedies and powers provided for herein and therein, are subject to the provisions of the Intercreditor Agreement (it being understood that any breach by any Grantor of its obligations hereunder or thereunder shall nonetheless constitute a default (and to the extent provided herein or therein, an Event of Default) hereunder or thereunder, as applicable, notwithstanding the foregoing).

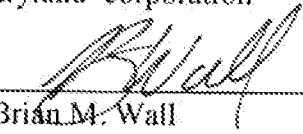
*(Signature Page Follows)*

*(Signature Page to Patent Security Agreement (Senior Subordinated Credit Agreement))*

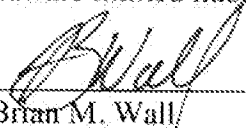
**IN WITNESS WHEREOF**, the parties hereto have caused this Patent Security Agreement to be executed and delivered as of the day and year first above written.

**GRANTORS:**

**EDGE BIOSYSTEMS, INC.**,  
a Maryland corporation

By:   
\_\_\_\_\_  
Brian M. Wall  
Chairman of the Board

**ANATRACE PRODUCTS, LLC**,  
a Delaware limited liability company

By:   
\_\_\_\_\_  
Brian M. Wall  
President

*(Signatures continue on following page)*

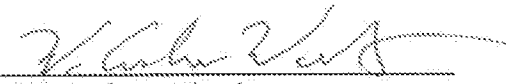
ACCEPTED AND ACKNOWLEDGED BY:

**LENDER:**

**FIDUS MEZZANINE CAPITAL, L.P.**, a  
Delaware limited partnership

By: Fidus Investment GP, LLC, its General  
Partner

By: Fidus Investment Advisors, LLC, its  
Manager

By: 

Name: W. Andrew Worth

Title: Manager

**SCHEDULE I**  
to  
**PATENT SECURITY AGREEMENT**

**Patents**

<b>Grantor</b>	<b>Country</b>	<b>Patent</b>	<b>Application/ Patent No.</b>	<b>Filing Date</b>
Anatrace Products, LLC	China (People's Republic)	DEVICE AND A METHOD FOR PROMOTING CRYSTALLISATION	200780024554.3 / ZL200780024554.3	6/27/2007
Anatrace Products, LLC	United States of America	AMPHIPHILIC COMPOUNDS	13/826,466 / 9,206,221	3/14/2013
Anatrace Products, LLC	India	A DEVICE AND A METHOD FOR PROMOTING CRYSTALLISATION	9631/DELNP/2008	6/27/2007
Anatrace Products, LLC	Japan	A DEVICE AND A METHOD FOR PROMOTING CRYSTALLISATION	2013-108417	6/27/2007
Anatrace Products, LLC	Japan	A DEVICE AND A METHOD FOR PROMOTING CRYSTALLISATION	2009-516905	6/27/2007
Anatrace Products, LLC	United States of America	SYNTHETIC AMPHIPHILES FOR MEMBRANE PROTEIN MANIPULATION	13/961,757	8/7/2013
Anatrace Products, LLC	Australia	A DEVICE AND A METHOD FOR PROMOTING CRYSTALLISATION	2007264161 / 2007264161	6/27/2007
Anatrace Products, LLC	Canada	A DEVICE AND A METHOD FOR PROMOTING CRYSTALLISATION	2653719 / 2653719	6/27/2007
Anatrace Products, LLC	European Patent Convention	A DEVICE AND A METHOD FOR PROMOTING CRYSTALLISATION	7764498.7	6/27/2007
Anatrace Products, LLC	United States of America	AMPHIPHILES FOR PROTEIN SOLUBILIZATION AND STABILIZATION	12/420,701 / 8,263,754	4/8/2009
Anatrace Products, LLC	United States of America	WATER SOLUBLE ACRYLIC MEMBRANE-POLYMER PROTEIN	09/331,036 / 6,492,501	11/5/1999



		AMPHIPHILIC COMPLEX AND APPLICATION TO DIAGNOSIS METHODS		
Anatrace Products, LLC	United States of America	CLEANING SOLUTION	13/183,282 / 8,609,602	7/14/2011
Anatrace Products, LLC	United States of America	CRYSTALLIZATION MEDIA	13/010,298 / 8,652,417	1/20/2011
Anatrace Products, LLC	United States of America	SYNTHETIC AMPHIPHILES FOR MEMBRANE PROTEIN MANIPULATION	12/731,000 / 8,530,631	3/24/2010
Anatrace Products, LLC	United States of America	MALTOSIDE AND PHOSPHOCHOLINE DERIVATIVES, USES THEREOF AND METHODS OF PREPARING ARTIFICIAL LIPID STRUCTURES THEREOF	13/272,090 / 8,846,899	10/12/2011
Anatrace Products, LLC	United States of America	AMPHIPHILES FOR PROTEIN SOLUBILIZATION AND STABILIZATION	13/608,385 / 8,877,906	9/10/2012
Anatrace Products, LLC	United States of America	DEVICE AND A METHOD FOR PROMOTING CRYSTALLISATION	12/303,132 / 8,986,449	12/2/2008
Anatrace Products, LLC	United States of America	AMPHIPHILIC AGENTS FOR MEMBRANE PROTEIN SOLUBILIZATION	09/238,522 / 6,172,262	1/27/1999
Anatrace Products, LLC	United States of America	WATER SOLUBLE CHOLESTEROL DERIVATIVES	12/494,159 / 8,071,759	6/29/2009
Anatrace Products, LLC	United States of America	EXTRACTION OF PROTEINS FROM NATURALLY OCCURRING MEMBRANES	08/747,670 / 5,763,586	11/12/1996 / 6/9/1998
Anatrace Products, LLC	United States of America	EXTRACTION OF PROTEINS FROM NATURALLY OCCURRING MEMBRANES	08/279,374 / 5,674,987	7/22/1994 / 10/7/1997
Edge Biosystems, Inc.	United States of America	Ion exchange method for DNA purification	09/898,473 / 6,504,021	07/05/2001

Edge Biosystems, Inc.	United States of America	Binding protein of biologically active compositions to an adhesive formulation on a substrate	07/732,487 / 6,093,558	07/25/1991
Edge Biosystems, Inc.	United States of America	Filterplate	29/331,700	1/30/2009