PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
HOMME W. HELLINGA	03/22/2017
MALIN J. ALLERT	03/22/2017

RECEIVING PARTY DATA

Name:	DUKE UNIVERSITY	
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City:	DURHAM	
State/Country:	NORTH CAROLINA	
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PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15777061

CORRESPONDENCE DATA

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SIGNATURE: DATE SIGNED:	/Ingrid A. Beattie/ 04/05/2019	
NAME OF SUBMITTER:	INGRID A. BEATTIE, PH.D., J.D.	
ATTORNEY DOCKET NUMBER:	035327-523N01US	

Total Attachments: 3

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PATENT 505412809 REEL: 048800 FRAME: 0704

Attorney Docket No.: 35327-523001WO

ASSIGNMENT.

We, Homme W. Hellinga of 5212 Pine Cone Lane, Durham, North Carolina 27705, and Malin J. Allert of 7718 San Gabriel Street, Raleigh, North Carolina 27613, the undersigned, for good and valuable consideration, the receipt of which is hereby acknowledged, confirm that we have sold and assigned, and do hereby assign, sell and transfer to Duke University, with offices at 2812 Erwin Road, Durham, North Carolina 27705, and to its successors, assigns and legal representatives, collectively hereinafter referred to as the ASSIGNEE: (1) our entire right, title and interest for the United States and in all countries, in and to any and all inventions, discoveries and applications which are disclosed in the application for United States Letters Patent entitled:

LACTATE BIOSENSORS AND USES THEREOF

filed with the United States Patent and Trademark Office Receiving Office on November 19, 2016, and assigned International Application No. PCT/US2016/062961, which claims priority to and/or the benefit of U.S. Provisional Application No. 62/257,856, filed on November 20, 2015 and U.S. Provisional Application No. 62/257,796, filed on November 20, 2015, and including any renewals, revivals, reissues, reexaminations, extensions, continuations and divisions thereof and any substitute applications therefor; (2) the full and complete right to file patent applications in the name of the ASSIGNEE, its designee, or in my name as the ASSIGNEE, or its designee's election, on the aforesaid inventions, discoveries and applications in all countries of the world; (3) the entire right, title and interest in and to any Letters Patent which may issue thereon in the United States or in any country, and any renewals, revivals, reissues, reexaminations and extensions thereof, and any patents of confirmation, registration and importation of the same; and (4) the entire right, title and interest in all Convention and Treaty Rights of all kinds thereon, including without limitation all rights of priority in any country of the world, in and to the above inventions, discoveries and applications.

This Assignment is based on our employment relationship with Duke University to assign the foregoing invention, and any patent applications therefore, in exchange for Assignee payment of patent prosecution costs and other valuable consideration, the receipt and sufficiency of which is hereby expressly acknowledged by the inventors.

We hereby authorize and request the competent authorities to grant and to issue any and all such Letters Patent in the United States and throughout the world to the ASSIGNEE of the entire right, title and interest therein, as fully and entirely as the same would have been held and enjoyed by me had this assignment, sale and transfer not been made.

We agree, at any time, upon the request of the ASSIGNEE, to execute and to deliver to the ASSIGNEE any additional applications for patents for said inventions and discoveries, or any part or parts thereof, and any applications for patents of confirmation, registration and importation based on any Letters Patent issuing on said inventions, discoveries, or applications and divisions, continuations, renewals, revivals, reissues, reexaminations and extensions thereof.

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Application Serial No.: PCT/US2016/062961

We further agree at any time to execute and to deliver upon request of the ASSIGNEE such additional documents, if any, as are necessary or desirable to secure patent protection on said inventions, discoveries and applications throughout all countries of the world, and otherwise to do the necessary to give full effect to and to perfect the rights of the ASSIGNEE under this Assignment, including the execution, delivery and procurement of any and all further documents evidencing this assignment, transfer and sale as may be necessary or desirable.

We hereby covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment.

We further covenant that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said invention and said Letters Patent and legal equivalents as may be known and accessible to ASSIGNOR and will testify as to the same in any interference, litigation or proceeding related thereto and will promptly execute and deliver to ASSIGNEE or its legal representatives any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue and enforce said application, said invention and said Letters Patent and said equivalents thereof which may be necessary or desirable to carry out the purposes thereof.

Date: Hand 22, 2017			
	Signature of: Homme W. Helli	nga	
in witness whereof, i, <u>Lather</u>	: 25 Sell-1	, hereby declare	
	(Frinted Name of vyitness)		
that I was personally present and did see the	above named person duly sign an	d execute the	
assignment.		-	
- Ether 20 Sel	3-32-	<u> </u>	
(Signature of Witness)	Date		
IN WITNESS WHEREOF, I, ROMAN	o.G. Brown	, hereby declare	
	(Printed Name of Witness)		
that I was personally present and did see the assignment.	above named person duly sign an	d execute the	
Ridw M. Grune	aa hoe	CLA 2013	
(Signature of Witness)	Date	* 7	

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Date: $03/22/2017$	MX AVM
, , , , , , , , , , , , , , , , , , ,	Signature of: Malin J. Allert
IN WITNESS WHEREOF, I, Lohor	
(Printed Name of Witness)	
that I was personally present and did see the a	bove named person duly sign and execute the
assignment.	ϵ
Enter 18 Sul	3-22-2017
(Signature of Witness)	Date
	10 G BROWAN , hereby declare (Printed Name of Witness)
that I was personally present and did see the a assignment.	
aosiginione.	
Pida Lh Guma	22 MARCH 2017

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RECORDED: 04/05/2019