#### 503546836 10/29/2015

# PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	ASSIGNMENT	

### **CONVEYING PARTY DATA**

Name	Execution Date
MICHAEL ZEMEL	07/13/2012
E. DOUGLAS GRINDSTAFF II	07/13/2012
ANTJE BRUCKBAUER	07/13/2012

# **RECEIVING PARTY DATA**

Name:	NUMETA SCIENCES, INC.		
Street Address:	1600 DIVISION ST.		
Internal Address:	SUITE 230		
City:	NASHVILLE		
State/Country:	TENNESSEE		
Postal Code:	37203		

### **PROPERTY NUMBERS Total: 1**

Property Type	Number
Application Number:	14927255

# CORRESPONDENCE DATA

Fax Number: (650)493-6811

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: 650-461-5211 Email: cricks@wsgr.com CHRISTINE RICKS **Correspondent Name:** Address Line 1: 650 PAGE MILL ROAD

Address Line 4: PALO ALTO, CALIFORNIA 94304-1050

ATTORNEY DOCKET NUMBER:	42736-702.303
NAME OF SUBMITTER:	CHRISTINE RICKS
SIGNATURE:	/Christine Ricks/
DATE SIGNED:	10/29/2015

**Total Attachments: 2** 

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**PATENT** REEL: 036918 FRAME: 0243 503546836

PATENT ASSIGNMENT	Docket Number 42736-702.201				
WHEREAS, the undersigned:					
	CKBAUER, Anije xville, TN				
(hereinafter "inventor(s))," have invented certain new and useful improvements in					
COMPOSITIONS AND METHODS FOR MODUL	ating metabolic pathways				
for which a United States patent application is executed on even date herewith;  for which Application No. 13/549.381 was filed on July 13.2812 in the United States Patent Office;  for which Application Nowas filed on in the U.S. Receiving Office of the Patent Cooperation Treaty;  for which Application Nowas filed on in the Patent Office; and/or for which an application was filed upon which a United States Patent issued on, as U.S. Patent No. (hereinafter "Application(s)");					
WHEREAS, NuMeta Sciences, Inc., a corporation of the State of Delawarz, having a place of business at 1600 Division St. Suita 230 Nashville, TN 37283, (hereinafter "Assignee"), is desirous of acquiring the entire right, title and interest in and to said Application(s) and the inventions disclosed therein, and in and to all embodiments of the inventions, heretofore conceived, made or discovered, whother jointly or severally, by said Inventor(s) (hereinafter collectively referred to as "inventions"), and in and to any and all patents, inventor's certificates and other forms of protection (hereinafter "Patent(s)") thereon granted in the United States, foreign countries, or under any international convention, agreement, protocol, or treaty.					
NOW, THEREFORE, in consideration of good and valuable consideration a said Assignee:	acknowledged by said inventor(s) to have been received in full from				
I. Said Inventor(a) do hereby sell, assign, transfer and convey unto said Assignee the antire right, title and interest (a) in and to said Inventions and said Applications, including the right to claim priority to said Inventions and said Applications; (b) in sad to all rights to all United States and corresponding non-United States patent applications and Patent(s), including those filed under the Paris Convention for the Protection of Industrial Property, The Patent Cooperation Treaty or otherwise; (c) in said to any and all applications filed and any and all Patent(s) granted on said inventions in the United States, in any foreign country, or under any international convention, agreement, protocol, or treaty, including each and every application (filed and any and all Patent(s) granted on any application which is a divisional, substitution, continuation, or continuation-in-part of any of said Application(s); and (d) in and to each and every reissue, reexamination, or extensions of any of said Patent(s).					
2. Said inventor(s) hereby covenant and agree to cooperate with said Assignee to enable said Assignee to enjoy to the fullest extent the right, title and interest herein conveyed in the United States, foreign countries, or under any international convention, agreement, protocol, or treaty. Such cooperation by said Inventor(s) shall include prompt production of pertinent facts and documents, giving of testimony, execution of pertitions, ostins, specifications, declarations or other papers, and other assistance all to the extent demost necessary or desirable by said Assignee (a) for perfecting is said Assignee the right, title and interest herein conveyed; (b) for proceduring any applications covering said Inventions; (c) for filing and proceduring abstitute, divisional, continuing or additional applications covering said inventions; (d) for filing and proceedings polications for reissuance of any said Patent(s); (e) for interference or other priority proceedings involving said inventions and any applications therefor and any Patent(s) granted thereon, including without limitation reissuan and recraminations, opposition proceedings, cancellation proceedings, priority contests, public use proceedings, infringement actions and court actions; provided, however, that the expense incurred by said inventor(s) in providing such cooperation shall be paid for by said Assignee.					
<ol> <li>The terms and covenants of this assignment shall inure to the benefit of said Assignee, its successors, assigns and other legal representatives, and shall be binding upon said inventor(s), their respective heirs, legal representatives and assigns.</li> </ol>					
<ol> <li>Said Inventor(s) hereby warrant and represent that they have not entered and will not enter into any assignment, contract, or understanding in conflict herewith.</li> </ol>					
5. Said Inventor(s) hereby request that any Patent(s) issuing in the United States, foreign countries, or under any international convention, agreement, protocol, or treaty, be issued in the name of the Assignee, or its successors and assigns, for the sole use of said Assignee, its successors, legal representatives and assigns.					
6. This instrument will be interpreted and construed in accordance with the laws of the State of California, without regard to conflict of law principles. If any provision of this instrument is found to be illegal or unenforceable, the other provisions shall remain effective and enforceable to the greatest extent permitted by law. This instrument may be executed in counterparts, each of which is deemed an original, but all of which together constitute one and the same agreement.					
IN WITNESS WHEREOF, said Inventor(s) same executed and delivered this instrument to said Assignee as of the dates written below:					
Date:	E. Douglas Crindstaff II				
Date: 7-13-12 0. B-u- Date:					

	PATENT ASSIGNMENT		Docket Number 42736-702,201
WHEREAS, the undersigned:			
1 ZEMEL, Michael Heiskell, TN	<ol><li>GRINDSTAFF II, E. Douglas Nashville, TN</li></ol>	3. BRUCKBAUER, And Knoxville, TN	tje '
(hereinafter "Inventor(s))." has	ve invented certain new and useful impro	vements in	•
	COMPOSITIONS AND METHODS I		BOI IC PATIRVAVE
☐ for which a Uni ☐ for which Appli ☐ for which Appli ☐ for which Appli	ted States patent application is executed e cation No. 13/549,381 was filed on July cation No was filed on in the U.s cation No was filed on in the plication was filed upon which a United S	on even date herewith;  13, 2012 in the United States Property (Office of the Patent Patent (Office) and (or	atent Office; Cooperation Treaty;
and in and to all embodiments collectively referred to as "Inve thereon granted in the United S	of the inventions, beretofore conceived, rentions"), and in and to any and all paters tates, foreign countries, or under any inte	, une and microst in and to said made or discovered, whether join is, inventor's certificates and oth emational convention, agreement	s at 1600 Division St. Suite 230 Nashville, TN Application(s) and the inventions disclosed therein tily or severally, by said inventor(s) (hereinafter or forms of protection (hereinafter "Patern(s)") t, protocol, or treaty.
NOW, THEREFORE said Assignee:	E, in consideration of good and valuable	consideration acknowledged by	said Inventor(s) to have been received in full from
and corresponding non-United Property, The Patent Cooperatie United States, in any foreign co- any and all Patent(s) granted on	is, the training the right to claim priority to States patent applications and Patent(s), in on Treaty or otherwise; (c) in and to any unitry, or under any international conveni-	said inventions and said Applies including those filed under the Praint and all applications filed and an airon, agreement, protocol, or trea bestitution, continuation or speci-	entire right, title and interest (a) in and to said ations; (b) in and to all rights to all United States aris Convention for the Protection of Industrial by and all Patent(s) granted on said Inventions in the try, including each and every application filed and nuation-in-part of any of said Application(s); and
registration by said inventor(s) specifications, declarations or o Assignee the right, title and intedivisional, continuing or addition (e) for interference or other prior therefor and any Patent(s) grant	shall include prompt production of pertir shall include prompt production of pertir their papers, and other assistance all to the rest herein conveyed; (b) for prosecuting and applications covering said Inventions wity proceedings involving said inventions and thereon, including without limitation and ceedings, infringement actions and court	notices, of under any international nem facts and documents, giving a extent decimed necessary or detains any applications covering said I is; (d) for filing and proceedings is; and (f) for legal proceedings is; and (f) for legal proceedings is existent and procedings.	ole said Assignee to enjoy to the fullest extent the convention, agreement, protocol, or treaty. Such of testimony, execution of petitions, oaths, sirable by said Assignee (a) for perfecting in said inventions; (c) for filing and prosecuting substitute, pplications for reissuance of any said Patent(s); involving said inventions and any applications existion proceedings, cancellation proceedings, the expense incurred by said inventor(s) in
3, The terms representatives, and shall be bin	and covenants of this assignment shall in ding upon said inventor(s), their respecti	ure to the benefit of said Assign we heirs, legal representatives an	ee, its successors, assigns and other legal dissigns.
4. Said Inventunderstanding in conflict herewi	tor(s) bereby warrant and represent that the	hey have not entered and will no	el enter into any assignment, contract, or
5. Said Inventagreement, protocol, or treaty, be representatives and assigns.	inr(s) hereby request that any Patent(s) is c issued in the name of the Assignee, or i	suing in the United States, foreigns successors and assigns, for the	en countries, or under any international convention, e sole use of said Assignee, its successors, legal
aw principles. If any provision	Of this instrument is found to be illegal or	timenforceable, the other people	State of California, without regard to conflict of ions shall remain effective and enforceable to the acd an original, but all of which together constitute
IN WITNESS WHER	EOF, said inventor(s) have executed and	delivered this instrument to said	Assignce as of the dates written below:
Date:M	ichael Zemel	Date: 7/13/12	E, Douglas Grindstaff II
Onte:	ntje Bruckbauer	Date:	
Ai	ILIC INTICKOSUCI		

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Page 1 of 1

PATENT REEL: 036918 FRAME: 0245