

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT3353168

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	SECURITY AGREEMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
QUINTILES TRANSNATIONAL CORP.	05/12/2015
ENCORE HEALTH RESOURCES, LLC	05/12/2015
OUTCOME SCIENCES, LLC	05/12/2015
QUINTILES, INC.	05/12/2015
QUINTILES MARKET INTELLIGENCE, LLC	05/12/2015
TARGETED MOLECULAR DIAGNOSTICS, LLC	05/12/2015
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	JPMORGAN CHASE BANK, N.A., AS ADMINISTRATIVE AGENT
<b>Street Address:</b>	10 SOUTH DEARBORN, FLOOR L2, IL1-1145
<b>City:</b>	CHICAGO
<b>State/Country:</b>	ILLINOIS
<b>Postal Code:</b>	60603
<b>PROPERTY NUMBERS Total: 29</b>	
<b>Property Type</b>	<b>Number</b>
Patent Number:	7353238
Patent Number:	8489412
Patent Number:	8706519
Patent Number:	7904313
Patent Number:	7676386
Patent Number:	7689439
Patent Number:	8155980
Patent Number:	8239778
Patent Number:	8370171
Patent Number:	8623604
Patent Number:	8709738
Patent Number:	7862995
Application Number:	13958325
Application Number:	12500105
Application Number:	12023687

PATENT

Property Type	Number
Application Number:	13925377
Application Number:	13925212
Application Number:	13925187
Application Number:	13925229
Application Number:	13925262
Application Number:	13925232
Application Number:	14479963
Application Number:	14490986
Application Number:	14535973
Application Number:	12023313
Application Number:	12908616
Application Number:	12792027
Application Number:	12791569
Application Number:	13857591

#### 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.*

Email: wayne.fitzpatrick@thomsonreuters.com  
Correspondent Name: ELAINE CARRERA, LEGAL ASSISTANT  
Address Line 1: 80 PINE STREET  
Address Line 2: C/O CAHILL GORDON & REINDEL LLP  
Address Line 4: NEW YORK, NEW YORK 10005

NAME OF SUBMITTER:	ELAINE CARRERA, LEGAL ASSISTANT
SIGNATURE:	/Wayne Fitzpatrick/
DATE SIGNED:	05/14/2015

#### Total Attachments: 13

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**Patent Security Agreement**

**Patent Security Agreement**, dated as of May 12, 2015, by QUINTILES TRANSNATIONAL CORP., ENCORE HEALTH RESOURCES, LLC, OUTCOME SCIENCES, LLC, QUINTILES, INC., QUINTILES MARKET INTELLIGENCE, LLC and TARGETED MOLECULAR DIAGNOSTICS, LLC (each, a “**Grantor**” and, collectively, the “**Grantors**”), in favor JPMORGAN CHASE BANK, N.A., in its capacity as administrative agent for the Secured Parties (in such capacity, the “**Administrative Agent**”).

WITNESSETH:

WHEREAS, the Grantors are party to a Security Agreement, dated as of May 12, 2015 (as amended, amended and restated, supplemented or otherwise modified from time to time, the “**Security Agreement**”), in favor of the Administrative Agent pursuant to which the Grantors are required to execute and deliver this Patent Security Agreement;

NOW, THEREFORE, in consideration of the premises and to induce the Administrative Agent, for the benefit of the Secured Parties, to enter into the Credit Agreement, the Grantors hereby agree with the Administrative Agent as follows:

SECTION 1. Defined Terms. Unless otherwise defined herein, terms defined in the Security Agreement and used herein have the meaning given to them in the Security Agreement.

SECTION 2. Grant of Security Interest in Patent Collateral. Each Grantor hereby pledges and grants to the Administrative Agent for the benefit of the Secured Parties a lien on and security interest in and to all of its right, title and interest in, to and under all the following Pledged Collateral of such Grantor:

- (a) Patents of such Grantor listed on Schedule I attached hereto; and
- (b) all Proceeds of any and all of the foregoing.

SECTION 3. The Security Agreement. The security interest granted pursuant to this Patent Security Agreement is granted in conjunction with the security interest granted to the Administrative Agent pursuant to the Security Agreement and Grantors hereby acknowledge and affirm that the rights and remedies of the Administrative Agent with respect to the security interest in the Patents 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. In the event that any provision of this Patent Security Agreement is deemed to conflict with the Security Agreement, the provisions of the Security Agreement shall control unless the Administrative Agent shall otherwise determine.

SECTION 4. Termination. Upon all of the Secured Obligations (other than (x) (i) Cash Management Obligations and (ii) Secured Obligations under Secured Hedge


Agreements not yet due and payable, and (y) contingent obligations not yet accrued and payable) having been paid in full, all Letters of Credit having been Cash Collateralized or otherwise back-stopped (including by "grandfathering" into any future credit facilities), in each case, on terms reasonably satisfactory to the relevant L/C Issuer in its reasonable discretion, or having expired or having been terminated, and the Aggregate Commitments having expired or having been terminated, and termination of the Security Agreement, this Patent Security Agreement and the security interest granted hereby shall terminate with respect to all of a Grantor's obligations and any lien arising therefrom shall be automatically released. Upon any sale or transfer by any Grantor of any Patent that is permitted under the Credit Agreement (other than a sale or transfer to another Loan Party), or upon the effectiveness of any written consent to the release of the security interest granted hereby in any Patent pursuant to Section 10.01 of the Credit Agreement, the security interest in such Patent shall be automatically released. The Administrative Agent shall, at the expense of such Grantor, execute, acknowledge, and deliver to the Grantors within a reasonable time an instrument in writing in recordable form releasing the collateral pledge, grant, assignment, lien and security interest in the Patents, or any of them in the case of a sale or transfer described by the second sentence of this Section 4, under this Patent Security Agreement.

SECTION 5. Counterparts. This Patent Security Agreement may be executed in any number of counterparts, all of which shall constitute one and the same instrument, and any party hereto may execute this Patent Security Agreement by signing and delivering one or more counterparts.

[Signature pages follow.]

IN WITNESS WHEREOF, each Grantor has caused this Patent Security Agreement to be executed and delivered by its duly authorized officer as of the date first set forth above.

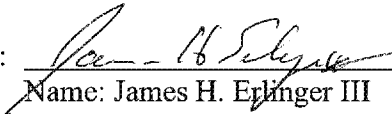
QUINTILES TRANSNATIONAL CORP., as  
Grantor

By:   
Name: Greg Connors  
Title: Senior Vice President

*Signature Page to Patent Security Agreement*

IN WITNESS WHEREOF, each Grantor has caused this Patent Security Agreement to be executed and delivered by its duly authorized officer as of the date first set forth above.

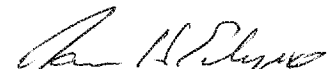
**OUTCOME SCIENCES, LLC**, as Grantor

By:   
Name: James H. Erlinger III  
Title: Secretary

*Signature Page to Patent Security Agreement*

IN WITNESS WHEREOF, each Grantor has caused this Patent Security Agreement to be executed and delivered by its duly authorized officer as of the date first set forth above.

**TARGETED MOLECULAR DIAGNOSTICS, LLC**

By: 

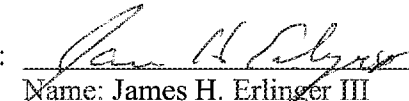
Name: James H. Erlinger III

Title: Vice President, Quintiles, Inc., the sole Member  
of Quintiles Laboratories, LLC, the sole Member

*Signature Page to Patent Security Agreement*

IN WITNESS WHEREOF, each Grantor has caused this Patent Security Agreement to be executed and delivered by its duly authorized officer as of the date first set forth above.

ENCORE HEALTH RESOURCES, LLC, as  
Grantor

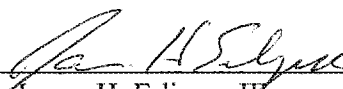
By:   
Name: James H. Erlinger III  
Title: President

*Signature Page to Patent Security Agreement*



IN WITNESS WHEREOF, each Grantor has caused this Patent Security Agreement to be executed and delivered by its duly authorized officer as of the date first set forth above.

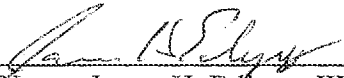
**QUINTILES MARKET INTELLIGENCE, LLC**, as  
Grantor

By:   
Name: James H. Erlinger III  
Title: Vice President, Quintiles Consulting, Inc.,  
the sole Member

*Signature Page to Patent Security Agreement*


IN WITNESS WHEREOF, each Grantor has caused this Patent Security Agreement to be executed and delivered by its duly authorized officer as of the date first set forth above.

QUINTILES, INC., as Grantor

By:   
Name: James H. Erlinger III  
Title: Vice President

*Signature Page to Patent Security Agreement*

JPMORGAN CHASE BANK, N.A.,  
as Administrative Agent

By:   
Name: Vanessa Chiu  
Title: Executive Director

**SCHEDULE I**  
**to**  
**PATENT SECURITY AGREEMENT**  
**U.S. PATENT REGISTRATIONS AND PATENT APPLICATIONS**

**United States Registrations:**

OWNER	REGISTRATION NUMBER	REGISTRATION DATE	COUNTRY	DESCRIPTION
Outcome Sciences, L.L.C.	7,353,238	4/1/2008	US	Apparatus and methods for determining and processing  medical outcomes
Outcome Sciences, Inc.	8,489,412	7/16/2013	US	Apparatus and Methods for Determining and Processing Medical Outcomes
Outcome Sciences, Inc.	8,706,519	4/22/2014	US	Apparatus and Methods for Determining and Processing Medical Outcomes
Quintiles, Inc.	7,904,313	3/8/2011	US	Recruiting a Patient into a Clinical Trial
Quintiles Transnational Corp.	7676386	3/9/2010	US	Systems and Methods for Scheduling and Sequencing Sessions or Appointments
Quintiles Transnational Corp.	7689439	3/30/2010	US	System and Method for Managing Medical Data
Quintiles Transnational Corp.	8,155,980	4/10/2012	US	System and Method for Managing Medical Data
Q-Epsilon, Inc.	8,239,778	8/17/2012	US	Graphical Database Interaction System and Method
Quintiles Transnational Corp.	8,370,171	2/5/2013	US	Methods for Providing an Easily Comprehensible Risk Rating for Pharmaceutical Products

*[Patent Security Agreement]*

**PATENT**  
**REEL: 035664 FRAME: 0191**

Quintiles Transnational Corp.	8,623,604	1/7/2014	US	Methods for Predicting Responsiveness of a Cancer Cell to an Anti-IGFR1 Antibody by Analysis of Mutations in PIK3CA
Quintiles Transnational Corp.	8,709,738	4/29/2014	US	Methods for Predicting Cardiac Toxicity
Targeted Molecular Diagnostics, LLC	7,862,995	1/4/2011	US	Methods and Materials for Predicting Responsiveness to Treatment with Dual Tyrosine Kinase Inhibitor

**United States Applications:**

OWNER	APPLICATION NUMBER	APPLICATION DATE	COUNTRY	DESCRIPTION
Encore Health Resources, LLC	13/958,325	08-02-2013	US	Measure Calculations Based on Structured Document
Outcome Sciences, Inc.	12/500,105	7/9/2009	US	Clinical Data Exchange for Supporting Transactions in Clinical Research Data
Quintiles Transnational Corp.	12/023,687	1/31/2008	US	Methods And Systems For Allocating Representatives to Sites in Clinical Trial
Quintiles Transnational Corp.	13/925,377	6/24/13	US	Methods and Systems for Predictive Clinical Planning and Design and Integrated Execution Services
Quintiles Transnational Corporation	13/925,212	6/24/13	US	Systems and Methods for Analytics on Viable Patient Populations
Quintiles Transnational Corporation	13/925,187	6/24/13	US	Systems and Methods for Subject Identification (ID) Modeling

*[Patent Security Agreement]*

**PATENT**  
**REEL: 035664 FRAME: 0192**

OWNER	APPLICATION NUMBER	APPLICATION DATE	COUNTRY	DESCRIPTION
Quintiles Transnational Corp.	13/925,229	6/24/13	US	Method and System to Manipulate Multiple Selections Against a Population of Elements
Quintiles Transnational Corp.	13/925,262	6/24/13	US	Systems and Methods for Predictive Analytics for Site Initiation and Patient Enrollment
Quintiles Transnational Corporation	13/925,232	6/24/13	US	Systems and Methods for Data Visualization
Quintiles Transnational Corporation	14/479,963	9/8/2014	US	Electrical Computing Devices for Recruiting a Patient Population for a Clinical Trial
Quintiles Transnational Corporation	14/490,986	9/19/2014	US	Electrical Computing Devices for Quantification of Differences in Medical Treatment Populations
Quintiles Transnational Corporation	14/535,973	11/7/2014	US	Electrical Computing Devices Providing Personalized Patient Drug Dosing Regimens
Quintiles Transnational Corp.	12/023,313	1/31/2008	US	Methods and Systems for Site Startup
Quintiles Transnational Corp.	12/908,616	10/20/2010	US	Systems and Processes for Managing and Supporting Regulatory Submissions in Clinical Trials
Targeted Molecular Diagnostics, LLC	12/792,027	6/2/2010	US	Methods for the Detection and Quantitation of the P95 Component of HER2/NEU (ERBB2)
Targeted Molecular Diagnostics, LLC	12/791,569	6/1/2010	US	Methods for the Detection and Quantitation of PTEN
Targeted Molecular Diagnostics, LLC	13/857,591	4/5/2013	US	Methods for Predicting Cardiac Toxicity

**Material Licenses:** None.

*[Patent Security Agreement]*