501888087 04/13/2012

PATENT ASSIGNMENT

Electronic Version v1.1 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
David Karaolis	04/13/2011

RECEIVING PARTY DATA

Name:	Karagen Pharmaceuticals	
Street Address:	4 Club Road	
City:	Baltimore	
State/Country:	MARYLAND	
Postal Code:	21210	

PROPERTY NUMBERS Total: 4

Property Type	Number
Patent Number:	7709458
Patent Number:	7592326
Patent Number:	7569555
Patent Number:	7291465

CORRESPONDENCE DATA

Fax Number: (410)230-7216
Email: mvchider@ober.com

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via US

Mail.

Correspondent Name: Ober|Kaler c/o Royal W. Craig

Address Line 1: 100 Light Street

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ATTORNEY DOCKET NUMBER:	033019.090289
NAME OF SUBMITTER:	Royal W. Craig

Total Attachments: 3

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> PATENT REEL: 028045 FRAME: 0533

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PATENT AND INTELLECTUAL PROPERTY ASSIGNMENT AGREEMENT

THIS AGREEMENT is made the thirteenth day of April 2011 by and between Karagen Pharmaceuticals ("Karagen"), a company incorporated in the State of Maryland, and Dr. David Karaolis ("Dr. David Karaolis"), an individual living in the State of Maryland.

WHEREAS, Dr. David Karaolis agrees to assign to Karagen Pharmaceuticals its title, rights and interest in and to the patent and patent applications described in Schedule 1;

WHEREAS, Karagen Pharmaceuticals and Dr. David Karaolis wish to document by formal assignment to Karagen Pharmaceuticals of Dr. David Karaolis's title, interest and rights in and to the patent and patent applications.

Karagen Pharmaceuticals and Dr. David Karaolis therefore agree as follows.

- 1. "Assigned Patents" shall mean the issued U.S. and foreign patents and patent applications listed on Schedule 1, including, but not limited to, (i) all know-how, trade secrets, discoveries, concepts, ideas, technologies, whether patentable or not, including processes, methods, formulas and techniques related to the foregoing, any and all written, unpatented technical or scientific information developed or acquired by Dr. David Karaolis, including laboratory and clinical notebooks, research data, research memoranda, computer software (including source code), computer records, scientist's notes, consultant reports, research reports from third parties, abandoned patent applications, invention disclosures, patentability reports and searches, patent and literature references, and the like developed or acquired before the date hereof related to such patents and patent applications; (ii) any and all copyrights, copyright registrations and copyrightable subject matter owned or controlled by Dr. David Karaolis related to such patents and patent applications; and (iii) any trademarks related to such patents or patent applications.
- 2. For good and valuable consideration, receipt of which is hereby acknowledged, Dr. David Karaolis hereby assigns to Karagen Pharmaceuticals all of the right, title and interest in (i) the inventions disclosed in any patent or application listed on Schedule 1, (ii) the Assigned Patents, (iii) any U.S. or foreign Letters Patent which may issue from any application listed on Schedule 1, and (iv) all divisions, continuations, reissues, re-examinations and extensions of the patents and applications listed on Schedule 1. Dr. David Karaolis further acknowledges that included in this assignment is the right to bring suit to enforce any of the Assigned Patents against activities which occurred before the date of this Agreement.
- 3. Dr. David Karaolis agrees to execute upon the request of Karagen Pharmaceuticals any assignment paper or other document reasonably necessary to evidence the assignment of the rights hereunder to Karagen Pharmaceuticals, and agrees to cooperate with Karagen Pharmaceuticals in all other matters relating to the assignment of these rights to Karagen Pharmaceuticals.

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- 4. This Agreement shall be construed in accordance with and governed by the laws of the State of Maryland, excluding any choice of law rules which direct the application of the laws of another jurisdiction.
- 5. This Agreement constitutes the sole understanding of the parties with respect to the transactions provided herein and supersedes and merges herein any previous agreements and understandings, oral and written, between the parties hereto with respect to the subject matter hereof.

IN WITNESS WHEREOF, this Agreement was executed by Dr. David Karaolis and Karagen Pharmaceuticals on April 13, 2011.

4/13/2011

Dr. David Karaolis

By: Dr. David Karaolis

Name: David Karaolis

Karagen Pharmaceuticals, INC.

By: Liselotte Davis

Name: Liselotte Davis

Title: Secretary/Treasurer/Shareholder

SCHEDULE 1. PATENT AND PATENT APPLICATIONS

All Patents and patent applications in the United States and Worldwide that have already been submitted, accepted or shall be submitted that have cyclic di-GMP, or a cyclic dinucleotide analogue thereof that has the same effect as cyclic di-GMP, as the basis for the patent or patent application are included in this agreement. These patents include, but are not limited to, the following:

- 1. Method for stimulating the immune, inflammatory or neuroprotective response [USPTO7709458]
- 2. Method for inhibiting cancer cell proliferation or increasing cancer cell apoptosis[USPTO7592326,USPTO7569555]
- 3. Method for attenuating virulence of microbial pathogens and for inhibiting microbial biofilm formation

In addition, the accepted patent "method for direct detection of fungal pathogens", [7291465]. All patents submitted, accepted and/or filed by David K.R. Karaolis are included within this agreement.

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RECORDED: 04/13/2012