UNIVERSITY OF CALIFORNIA, DAVIS
MATERIAL TRANSFER AGREEMENT

This Agreement is made this 26th day of July 2016, by and between THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, as represented by its Davis campus ("UC DAVIS"), having an address at the UC Davis InnovationAccess, Technology Transfer Services, University of California, Davis, 1850 Research Park Drive, Suite 100, Davis, California 95618-6134, and U.S. EPA Office of Research and Development, National Center for Computational Toxicology ("RECIPIENT"), having its principal place of business at 109 TW Alexander Dr., MD D143-02, Research Triangle Park, NC 27711 (collectively "the PARTIES").

The RECIPIENT has requested from UC DAVIS the MATERIAL as set out in UC Case No. 2011-003 and defined in Section 1.B. below for the RESEARCH USE defined in Section 1.F. below by the RECIPIENT INVESTIGATOR(S) defined in Section 1.G. below. In consideration of the supply of the MATERIAL from UC DAVIS to the RECIPIENT, the PARTIES agree as follows:

1. **Definitions**

A. "ORIGINAL TRANSFERRED MATERIAL": The physical material actually delivered to the RECIPIENT by UC DAVIS, as identified in Appendix A attached hereto. The ORIGINAL TRANSFERRED MATERIAL contains material covered by Promega's Limited Use Label License in Appendix B attached hereto.

B. "MATERIAL": ORIGINAL TRANSFERRED MATERIAL, PROGENY, and UNMODIFIED DERIVATIVES.

C. "PROGENY": Unmodified descendant from the MATERIAL. Examples include but are not limited to: virus from virus; cell from cell; and organism from organism.

D. "UNMODIFIED DERIVATIVES": Substances created by the RECIPIENT that constitute an unmodified functional sub-unit or an expression product of the ORIGINAL TRANSFERRED MATERIAL. Examples include but are not limited to: subclones of unmodified cell lines; purified or fractionated sub-sets of the ORIGINAL TRANSFERRED MATERIAL; transcription and translation products (e.g., RNA and protein derived from provided DNA); reverse transcription and reverse translation products (e.g., DNA synthesized on a template using provided RNA); monoclonal antibodies secreted by a hybridoma cell line; and chemically-synthesized copies.

E. "MODIFICATIONS": Substances, exclusive of PROGENY and UNMODIFIED DERIVATIVES, created by the RECIPIENT that either contain or incorporate the MATERIAL or were otherwise created through the use of the MATERIAL.

F. "RESEARCH USE": The scientific RESEARCH USE specified in Appendix A.

G. "RECIPIENT INVESTIGATOR(S)": The RECIPIENT's scientific investigator(s) named in Appendix A.

H. "CONFIDENTIAL INFORMATION": Information, data or material in written or other tangible form related to the MATERIAL that is identified as confidential at the time of disclosure. CONFIDENTIAL INFORMATION does not include information which:

(i) the RECEIVING PARTY can demonstrate by written records was previously known to it;
(ii) at the time of disclosure is, or subsequently becomes, public knowledge other than through acts or omissions of the RECEIVING PARTY;
(iii) is lawfully obtained by the RECEIVING PARTY from sources independent of the DISCLOSING PARTY;
(iv) the RECEIVING PARTY is required to disclose under the California Public Records Act; or
(v) is otherwise required to be disclosed by the RECEIVING PARTY due to law or judicial action.

U.C. AGREEMENT CONTROL NUMBER
2017-21-0316

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2. Terms and Conditions

A. Use

i. The RECIPIENT shall use the MATERIAL or MODIFICATIONS solely for the RESEARCH USE, and in accordance with the restrictions required by Promega, as specified in Appendices A and B (with respect to the Promega product). Any other use of the MATERIAL or MODIFICATIONS by the RECIPIENT is expressly prohibited without the prior written consent of UC DAVIS. In addition, the RECIPIENT shall use the MATERIAL or MODIFICATIONS in compliance with all applicable statutes and regulations, including, but not limited to, those related to research involving the use of animals or recombinant DNA. The MATERIAL or MODIFICATIONS may not be used on any human subjects or for commercial purposes or any other use other than the RESEARCH USE. RECIPIENT will not make MODIFICATIONS of the MATERIAL.

ii. The RECIPIENT shall not analyze the MATERIAL for chemical composition or physical structure or have or allow any component of the MATERIAL to be analyzed or make any use of any such analysis. The RECIPIENT shall not alter the chemical structure of the MATERIAL in any way.

iii. The ORIGINAL TRANSFERRED MATERIAL contains material covered by Promega's Limited Use Label License in Appendix B attached hereto. RECIPIENT hereby agrees to comply with all terms set forth therein.

B. Tangible Property Ownership: UC DAVIS retains ownership of the MATERIAL, including any MATERIAL contained or incorporated in MODIFICATIONS.

C. Confidentiality: Any CONFIDENTIAL INFORMATION disclosed by the disclosing party to the receiving party shall be treated as confidential and maintained in confidence by the receiving party. The receiving party shall not disclose any CONFIDENTIAL INFORMATION of the disclosing party, except to its own personnel who have a need to know. Without limiting the foregoing, the receiving party shall take at least the same steps and use the same methods to prevent the unauthorized use or disclosure of CONFIDENTIAL INFORMATION of the disclosing party as it takes to protect its own CONFIDENTIAL INFORMATION or proprietary information. The confidentiality obligations of each party under this Agreement shall remain in effect for five (5) years from the effective date hereof.

D. Distribution: The RECIPIENT shall not transfer the MATERIAL or MODIFICATIONS to anyone other than to one who works under the direct supervision of the RECIPIENT INVESTIGATOR within the RESEARCH USE without the prior written consent of UC DAVIS.

E. Disclosure, Inventorship, and Intellectual Property Rights

i. Disclosure: The RECIPIENT shall promptly notify UC DAVIS of any potentially patentable discoveries or inventions made through the use of the MATERIAL, whether or not made within the specified limits of the approved RESEARCH USE. The RECIPIENT shall promptly supply UC DAVIS with a copy of the invention disclosure.

ii. Inventorship: Inventorship shall be determined according to United States patent law.

iii. Intellectual Property Rights: Collaborative efforts of UC DAVIS and the RECIPIENT may create inventorship rights under United States patent law as well as under the law of any applicable jurisdiction in which a party or the PARTIES may elect to file patent application(s). Each party shall own its undivided interest in joint inventions. The PARTIES shall cooperate in discussing and securing intellectual property rights to protect potentially patentable inventions.

iv. No Implied Rights: The RECIPIENT acknowledges that the MATERIAL is or may be the subject of a patent application. Except as provided in this Agreement, no express or implied license or other rights are provided to the RECIPIENT under any patents, patent applications, trade secrets or other proprietary rights of UC DAVIS, including any altered forms of the MATERIAL made by UC DAVIS. In particular, no express or implied licenses or other rights are provided to use the MATERIAL, MODIFICATIONS or any related patents of UC DAVIS for commercial use or any other use other than the RESEARCH USE.

F. Warranty and Licenses

i. Any MATERIAL delivered pursuant to this Agreement is understood to be experimental in nature and may have hazardous properties. UC DAVIS MAKES NO REPRESENTATIONS AND EXTENDS NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED. THERE ARE NO EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR THAT THE USE OF THE MATERIAL SHALL NOT INFRINGE ANY PATENT, COPYRIGHT, TRADEMARK, OR OTHER PROPRIETARY RIGHTS.

ii. Commercial Use (as defined in Appendix B) of MATERIAL and MODIFICATIONS is expressly prohibited under this Agreement.

G. Liability: The RECIPIENT assumes all liability for damages that may arise from its use, storage or disposal of the MATERIAL or MODIFICATIONS. UC DAVIS shall not be liable to the RECIPIENT for any loss, claim or demand made by the RECIPIENT, or made against the RECIPIENT by any other party, due to or arising from the use, storage or disposal of the MATERIAL or MODIFICATIONS by the RECIPIENT.

H. Publication of Research Results: The RECIPIENT may publish or present results of research relating to the MATERIAL, provided the RECIPIENT provides UC DAVIS with a copy of any proposed manuscript, abstract, poster session or presentation at least thirty (30) days prior to such publication or presentation. UC DAVIS shall review such publication or presentation for CONFIDENTIAL INFORMATION or patentable material and may request a delay of the proposed publication or presentation for up to an additional thirty (30) days to allow for the removal of CONFIDENTIAL INFORMATION or the filing of patent application(s). Unless UC DAVIS directs otherwise, any publication or presentation reporting the research carried out with the MATERIAL shall contain proper referencing in academic journal format, acknowledging UC DAVIS as the source of the MATERIAL.

I. Termination

i. Date: This Agreement shall terminate on the earliest of the following dates:
(a) on completion of the RECIPIENT'S current RESEARCH USE with the MATERIAL;
(b) on thirty (30) days' written notice by one party to the other; or
(c) three (3) years from the date of execution of this Agreement by UC DAVIS.

ii. Surviving Obligations: Obligations with respect to Tangible Property Ownership (2.B.), Confidentiality (2.C.), Distribution (2.D.), Disclosure, Inventorship, and Intellectual Property Rights (2.E.), Warranty and Licenses (2.F.), Liability (2.G.), Publication of Research Results (2.H.), and this Section (2.I.ii) shall survive termination.

iii. Return of MATERIAL: As directed by UC DAVIS, the RECIPIENT shall stop using the MATERIAL and shall return or destroy any remaining MATERIAL on the termination of this Agreement.

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J. Notice: Any notice required under this Agreement shall be considered properly given and effective on the date of the postmark if mailed by prepaid postage first-class certified mail; on the date of delivery if delivered in person; or on the date of receipt if mailed by any global express carrier service that requires the recipient to sign the documents demonstrating the delivery of such notice. Notice shall be given to the designated authorized official at the address provided below:

FOR THE REGENTS OF THE UNIVERSITY OF CALIFORNIA:	
Authorized Official:	Executive Director
Address:	UC Davis Innovation Access Technology Transfer Services University of California, Davis 1850 Research Park Drive, Suite 100
City, State, Zip:	Davis, CA 95618-6134
Country:	USA
Telephone:	(530) 754-8649
Fax:	(530) 754-7620

FOR RECIPIENT:	Dr. Russell Thomas, Director
Authorized Official:	~~Dr. Kevin Crofton~~, ~~Deputy~~ Director
Recipient Institution:	National Center for Computational Toxicology U.S. EPA Office of Research and Development
Address:	109 TW Alexander Dr. MD D143-02
City/State/Zip:	Research Triangle Park, NC 27711
Country:	USA
Telephone:	(919) 541-2672
Fax:	

[Remainder of this page intentionally left blank.]

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3. Complete Agreement

This Agreement constitutes all the agreements between the PARTIES, both written and oral with respect to the subject matter hereof. All prior agreements respecting the subject matter hereof, either written or oral, expressed or implied, between the PARTIES are hereby canceled. This Agreement may be executed in any number of counterparts, including facsimile or scanned PDF documents. Each such counterpart, facsimile or scanned PDF document shall be deemed an original instrument, and all of such counterparts, together, shall constitute one and the same executed Agreement.

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

By: [redacted]
Clinton H. Neagley
Associate Director
Technology Transfer Services

Date: 11/17/2016

NATIONAL CENTER FOR COMPUTATIONAL TOXICOLOGY, U.S. EPA OFFICE OF RESEARCH AND DEVELOPMENT

By [redacted]
Name: ~~Kevin Crofton~~ Russell Thomas
Title: ~~Deputy~~ Director

Date: 10/26/16

UC DAVIS INVESTIGATOR and RECIPIENT INVESTIGATOR acknowledge reading and understanding this Agreement and shall abide by the terms and conditions thereof.

UC DAVIS INVESTIGATOR [redacted]

Name: Michael Denison, Ph.D.
Title: Professor

Date: 11/7/16

RECIPIENT INVESTIGATOR [redacted]

Name: Steven Simmons, Ph.D.
Title: Principal Investigator

Date: 10/26/2016

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APPENDIX A

1. ORIGINAL TRANSFERRED MATERIAL:

Recombinant VM7Luc4E2 human breast carcinoma cells, which are a variant of MCF7 cells that have been stably transfected with the estrogen receptor-responsive firefly luciferase reporter gene plasmid, pGudLuc7.0ere (which contains estrogen-responsive elements). Please refer to Rogers and Denison (In Vitro and Molecular Toxicology 13, 67-82 (2000)) for details. The pGL3 Luciferase Reporter Vector ("pGL3") was purchased from Promega and is for non-clinical and non-commercial research uses only. pGL3 is covered under Promega's Limited Use Label License in Appendix B attached hereto.

2. RESEARCH USE:

The ORIGINAL TRANSFERRED MATERIAL is provided to the RECIPIENT for the detection of estrogenic and antiestrogenic chemicals for non-clinical and non-commercial research purposes only.

3. RECIPIENT INVESTIGATOR (name):

Steve Simmons, Ph.D.

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APPENDIX B

pGL3 Luciferase Reporter Vectors

Patents/Disclaimers
[a]LIMITED USE LICENSE
For research use only. The terms of the limited license conveyed with the purchase of this product are as follows: Researchers may use this product in their own research and they may transfer derivatives to others for such research use provided that at the time of transfer a copy of this label license is given to the recipients and the recipients agree to be bound by the conditions of this label license. Researchers shall have no right to modify or otherwise create variations of the nucleotide sequence of the luciferase gene except that Researchers may: (1) clone heterologous DNA sequences at either or both ends of said luciferase gene so as to create fused gene sequences provided that the coding sequence of the resulting luciferase gene has no more than four deoxynucleotides missing at the affected terminus when compared to the intact luciferase gene sequence, and (2) insert and remove nucleic acid sequences in furtherance of splicing research predicated on the inactivation or reconstitution of the luminescent activity of the encoded luciferase. In addition, Researchers must do one of the following: (1) use luminescent assay reagents purchased from Promega Corporation for all determinations of luminescence activity resulting from the research use of this product and its derivatives; or (2) contact Promega to obtain a license for the use of the product and its derivatives. No other use or transfer of this product or its derivatives is authorized without the express written consent of Promega including, without limitation, Commercial Use. Commercial Use means any and all uses of this product and derivatives by a party for monetary or other consideration and may include but is not limited to use in: (1) product manufacture; and (2) to provide a service, information or data; and/or resale of the product or its derivatives, whether or not such product or derivatives are resold for use in research. With respect to such Commercial Use, or any diagnostic, therapeutic or prophylactic uses, please contact Promega for supply and licensing information. If the purchaser is not willing to accept the conditions of this limited use statement, Promega is willing to accept the return of the unopened product and provide the purchaser with a full refund. However, in the event the product is opened, then the purchaser agrees to be bound by the conditions of this limited use statement. The above license relates to Promega patents and/or patent applications on improvements to the luciferase gene.
[b]U.S. Pat. No. 5,670,356.
[c]The method of recombinant expression of *Coleoptera* luciferase is covered by U.S. Pat. Nos. 5,583,024, 5,674,713 and 5,700,673. A license (from Promega for research reagent products and from The Regents of the University of California for all other fields) is needed for any commercial sale of nucleic acid contained within or derived from this product.