

Software License Agreement

This Software was developed by the <MPG/Bioinformatics, Dep Microbial and Molecular Systems and is owned by the Katholieke Universiteit Leuven, for the purposes of this Agreement represented by K.U.Leuven Research & Development, Minderbroederstraat 8a – box 5105, B-3000 Leuven, Belgium ("hereinafter referred to as KULEUVEN").

Article 1 - Definitions

1.1 "Software" shall mean KULEUVEN's software in executable version described in Annex A, excluding source code.

1.2 "Effective Date" shall mean the date on which you download or install the Software and associated files on your system.

1.3 "Academic User" shall mean a user of Software: who is employed by, or a student enrolled at, or a scientist legitimately affiliated with an academic, non-profit or government institution; and whose use of the Software is on behalf of and in the interest of such academic, non-profit or government institution and is not on behalf of a commercial entity.

Article 2 - License

2.1 As long as you qualify as an Academic User, K.U.LEUVEN hereby grants you a royalty-free, non-exclusive, non-transferable license to the Software supplied by KULEUVEN for strictly internal, non-commercial research use only. You acknowledge and agree that you may not use the Software for commercial purpose without first obtaining a commercial license from K.U.LEUVEN.

2.2 For the purposes of this Agreement "use for commercial purposes" shall include the use or transfer of the Software for a consideration as well as the use of the Software to support commercial activities including providing services with the Software to third parties. Any use of Software for commercial purposes without first obtaining a license from KULEUVEN shall be deemed a breach of this Agreement for which KULEUVEN shall be entitled to whatever remedies it may have under law or equity, including recovery of consequential damages.

2.3 You shall not sublicense any of your rights to the Software. Neither will you transfer the Software to a third party, unless prior written agreement of KULEUVEN has been obtained. Furthermore, you are not allowed to reverse engineer, decompile or disassemble the Software.

Article 3 - Ownership

The Software is copyrighted and KULEUVEN retains all title and ownership to the Software. Nothing in this Agreement shall preclude KULEUVEN from entering into agreements with third parties concerning the Software.

Article 4 - Publication

LICENSEE shall acknowledge KULEUVEN as the provider of the Software and shall include a reference to the reference listed in Annex A in any manuscript describing data obtained using the Software.

Article 5 - No Support

This license does not entitle you to receive from KULEUVEN technical support, telephone assistance, or enhancements or updates to the Software. Any support that may be given by the authors of the Software on voluntary basis is provided "as is" and KULEUVEN makes no representations or warranties of any type whatsoever, express or implied, regarding the provided support.

Article 6 - Warranty

6.1 The Software is provided "as is" by KULEUVEN without warranty of any kind, whether express or implied. KULEUVEN specifically disclaims the implied warranties of merchantability and fitness for a particular purpose or that the use of the Software will not infringe any patents, copyrights or trademarks or other rights of third parties. The entire risk as to the quality and performance of the Licensed Software is borne by you.

6.2 KULEUVEN shall not be responsible for any loss, direct or indirect damage or other liability incurred by you or any third party in connection with the Software licensed by KULEUVEN under this Agreement. Under no circumstances

shall KULEUVEN be liable for any direct, indirect, special, incidental, or consequential damages arising out of any performance of this Agreement, whether such damages are based on contract, tort or any other legal theory. You shall defend, indemnify and hold harmless KULEUVEN from all losses, damages, expenses, costs and other liabilities in connection with your use or disclosure of the Software.

Article 7 - Indemnification

You will indemnify, defend and hold harmless KULEUVEN, its directors, officers, employees and agents from and against all liability, losses, damages and expenses (including attorney's fees and costs) arising out of any claims, demands, actions or other proceedings made or instituted by any third party against any of them and arising out of or relating to any breach of this Agreement by you, or any use of the Software by you, except insofar as such claims or liability result from KULEUVEN gross negligence or willful misconduct.

Article 8 - Term

8.1 This Agreement is effective from the Effective Date until you delete the Software and any and all related files from your computing system. This Agreement will terminate immediately without notice from K.U. LEUVEN if you fail to comply with any provision of this Agreement.

8.2 In case of termination the provisions of Article 3, 6, and 7 shall remain in full force and effect.

Article 9 - Miscellaneous

9.1 Any notice authorised or required to be given to KULEUVEN under this Agreement shall be in writing and shall be deemed to be duly given if left at or sent by registered post.

9.2 The terms and conditions herein contained constitute the entire agreement between the Parties and supersede all previous agreements and understandings, whether oral or written, between the parties hereto with respect to the subject matter thereof.

Article 10 - Conflicts

In the event of conflicts in the interpretation and/or performance of this Agreement, the parties shall first undertake to settle their differences amicably. If no amicable settlement can be reached concerning the execution and/or interpretation of this Agreement, such conflict shall be brought before the courts of Leuven and Belgian Law shall be applicable.

Choose one of the options below:

By downloading and or installing the Software and associated files on your computing system you agree to use the Software under the terms and condition as specified in this Agreement.

Or

By crossing the I agree button below you acknowledge that you agree on terms of use specified above.

I agree to the terms of use specified above:

Annex A: ModuleDigger

Description of the Software:

The detection of *cis*-regulatory modules (CRMs) that mediate transcriptional responses in eukaryotes remains a key challenge in the postgenomic era. A CRM is characterized by a set of co-occurring transcription factor binding sites (TFBS). *In silico* methods have been developed to search for CRMs by determining the combination of TFBS that are statistically overrepresented in a certain geneset. Most of these methods solve this combinatorial problem by relying on computational intensive optimization methods. As a result their usage is limited to finding CRMs in small datasets (containing a few genes only) and using binding sites for a restricted number of transcription factors (TFs) out of which the optimal module will be selected.

ModuleDigger is a tool based on an itemset mining based strategy for computationally detecting *cis*-regulatory modules (CRMs) in a set of genes. ModuleDigger can handle larger dataset as well as considering a genome-wide view which means it is considered specific for the whole cluster of input genes if the CRM is statistically more overrepresented in this cluster of genes than in the remainder of the genome. By exploiting the computational efficiency of an itemset mining approach and combining it with a well-designed statistical scoring scheme, we were able to prioritize the biologically valid CRMs in a large set of coregulated genes using binding sites for a large number of potential TFs as input.

Reference:

1. Sun H., De Bie T., Storms V., Fu Q., Dhollander T., Lemmens K., Verstuyf A., De Moor B., Marchal K., "ModuleDigger: an itemset mining framework for the detection of *cis*-regulatory modules". BMC bioinformatics, Vol. 10 Suppl 1 (2009).
2. Sun, H., De Bie, T., Storms, V., Fu, Q., Dhollander, T., Lemmens, K., Verstuyf, A., De Moor, B., Marchal K., ModuleDigger: an itemset mining framework for the detection of *cis*-regulatory modules. In : Proceedings of 7th Asia-Pacific Bioinformatics Conference APBC2009 7th Asia-Pacific Bioinformatics Conference APBC2009.