

rDNA Committee Meeting Minutes

Date: 10/27/2015

Time: 4:00 PM to 6:00 PM

Location: EHS Dept., Kurata Building, Rm 124, Lawrence (West) Campus

1) Introductions

Committee members

Steve Benedict (Chair) KU-Molecular Biosciences
Kristi Neufeld (Professor) KU-Molecular Biosciences
Mike Russell KU-Environment, Health & Safety
Jeff Barclay (new member) Community Rep
Kevin Kennedy (new member) Community Rep

Non-voting Staff

Kathy Stiers, KU-EHS, Committee Secretary
Sean Hadley, KU-EHS, Committee Tech Support

Guests

Michael Berta, PI representative

2) Approval of Minutes

rDNA Committee Meeting Minutes for 01/07/2015

Kristi Neufeld moved to approve, Mike Russell seconded the motion.
3 voted yes, and 2 abstentions (two new community reps).

rDNA Committee Meeting Minutes for 01/15/2015

Mike Russell moved to approve, Kristi Neufeld seconded, 4 voted yes, and 1
abstention.

3) rDNA Protocol Review by Committee

The committee discussed two rDNA proposal documents. Discussion and recommendations for revision are detailed below.

A) 14-02: Picking rDNA proposal title: Chlamydia Protein Expression

Project Summary. The committee discussed that the summary should be made more accessible to the community representatives and the community at large. This would include defined perspectives on objective of the research, purpose of the rDNA in the project and a brief overview of prospective research and expected results. The wording should be as jargon-free as possible and language addressed to the community representatives who have scientific knowledge and experience but who may not be versed in this particular field.

Point 1 on the petition document. The committee discussed that this section could be enhanced for completeness and clarity. The questionnaire requests lists of all genes to be used as rDNA, their functions where known and the logic by which the PI proposes a function when it is not known. The committee also requests that with organisms like Chlamydia which can be pathogenic the gene products directly under study be evaluated by the PI for contribution to pathogenicity. The vector(s) in use should be described according to relevant characteristics such as promoters, enhancers, antibiotic resistance, etc. With respect to the important reagents, sources should be provided (only) in cases where such provision is relevant: e.g. (1) persons or corporate entities providing specific DNA for the project, especially in cases where transfer agreements have been signed; (2) specific organisms from which each gene will be taken; (3) companies used to synthesize sensitive DNA where sequence or confidentiality might become important to the university later.

Point 3. The committee members discussed that because this organism has a very unusual life cycle, the document would be more accessible if a brief description of the life cycle were provided.

Point 4. For this point the committee requests that the PI cite the specific sections in the NIH recombinant DNA guidelines that provide support for the conclusion that this work is “exempt” and that guides the PI to propose BSL2 practices. The committee notes that this request will be made to each petitioner in the future.

Point 6 and Point 7. These questions request information about toxicity and other potential deleterious effects to lab workers and the environment (to include humans outside the immediate work area). The committee discussed that both these sections could be enhanced and made more explicit.

Point 8. This question asks whether mutations will be created. The committee concluded that this answer could be enhanced and made more explicit.

Point 10. This question asks about survival outside the lab of the organism in which rDNA is placed, and whether the new organism will acquire altered host range or pathogenicity. The committee discussed whether these events could happen and concluded that more explanation of the possibilities would be helpful.

Point 11 is in regard to animal work using the rDNA-involved organisms. The committee requests that the answer to that question be changed to “no” and that a statement be included that when animal work becomes appropriate the investigator will submit appropriate revision for committee’s consideration.

B) 14-03: Picking rDNA Shigella Protein Expression

Project Summary. The committee discussed that the summary should be made more accessible to the community representatives and the community at large. This would include defined perspectives on objective of the research, purpose of the rDNA in the project and a brief overview of prospective research and expected results. The wording should be as jargon-free as possible and language addressed to the community representatives who have scientific knowledge and experience but who may not be versed in this particular field.

The committee discussed that all genes listed should be accompanied by their functions or proposed functions. Since mutations will be created, the committee discussed that the summary section is a good place for the rationale behind the intent to make mutations plus discussion of how or whether each mutation might change virulence.

Questionnaire Point 1. The committee discussed that the response to this point was complete except for two issues. [1] The response should list and define relevant characteristics for vectors to be used, e.g. regulatory sequences, antibiotic resistance, genes under study and other functional sequences. A very simple (even hand drawn) linear vector map would be fine. [2] With respect to sources of reagents, the committee discussed that sources should be provided (only) in cases where such provision is relevant: e.g. (1) persons or corporate entities providing specific DNA for the project, especially in cases where transfer agreements have been signed; (2) specific organisms from which each gene will be taken; (3) companies used to synthesize sensitive DNA where sequence or confidentiality might become important to the university later.

Point 4. The committee discussed that the petitioner cite the specific area(s) in the NIH recombinant DNA web site that support the need for RG-2. This will become a standard practice for all proposals needing review. An example was suggested during discussion: “The PI has looked at the NIH recombinant DNA web site and has determined that the proposed work falls under NIH Guidelines, Section _____. It is considered Risk Group _____, and requires BSL-_____ practices and procedures.

Point 6 and Point 7. These questions request information about toxicity and other potential deleterious effects to lab workers and the environment (to include humans outside the immediate work area). The committee discussed that both these sections could be enhanced and made more explicit. As part of the response the committee discussed how the PI might monitor potential changes in pathogenicity and how that might be handled. The committee requested that this be dealt with.

Point 8. This question asks whether mutations will be created. The committee concluded that since mutations will be created, this answer could be enhanced and made more explicit.

Point 9. The committee discussed that the original summary paragraph indicated the possibility of altered pathogenicity and concluded that this section should respond to that issue.

Point 10. This question asks about survival outside the lab of the organism in which rDNA is placed, and whether the new organism will acquire altered host range or pathogenicity. The committee discussed whether these events could happen and concluded that more explanation of the possibilities would be helpful.

The committee also discussed the earlier PI response to an EHS comment about antibiotic resistance and would like to have the EHS comment and the PI's response incorporated into the document.

C) Committee Action:

Kevin Kennedy moved to request and Kristi Neufeld seconded the motion to have the PI address questions and provide information to address Committee recommended modifications on both protocols. Committee voted unanimously (5-0) in favor of requesting that both protocols require modification to secure approval.

Chair will provide committee response back to PI to seek modification.

Committee will meet as appropriate and soon as possible to review modifications once received.

4) Committee Discussion Items

A) Report on NIH exempt rDNA registrations.

Mike Russell provided report of exempt rDNA registrations that were reviewed by EHS & Chair and were approved between meetings.

NIH rDNA Exempt Protocols

04/13/2015 – Protocol “expression and purification of type III secretion system (T3SS) apparatus proteins as well as effector proteins in E. coli expression systems”. Proteins from: S.f., S.e., Y.p., P.a., & B.m. PI: Dr. W. Picking. NIH Exempt (III-F). RG1/BL1. Does not need committee review. Reviewed and approved by EHS & Chair. rDNA approval #14-01.

05/04/2014 - Protocol “generate GFP transgenic lines of the marine invertebrate Hydractinia”. PI: Dr. P. Cartwright. NIH status (III-F). RG1/BL1. Does not need committee review. Reviewed and approved by EHS & Chair. rDNA approval #74-02.

05/13/2015 - Protocol “overproduction and purification of human pyruvate kinase and aldolase through E.coli to for structure-function analysis of amino acid variants via crystallography”. PI: Dr. Audrey Lamb. NIH rDNA exempt (III-F). RG1/BL1. PI indicated will use BSL2. Does not need committee review. Reviewed and approved by EHS & Chair. rDNA approval #21-09.

06/24/2015 – AMENDMENT: Protocol “expression and purification of type III secretion system (T3SS) apparatus proteins as well as effector proteins in E. coli expression systems”. Proteins from: S.f., S.e., Y.p., P.a., & B.m. Adding additional putative tip protein from Chlamydia spp. PI: Dr. W. Picking. NIH Exempt (III-F). RG1/BL1. Does not need committee review. Reviewed and approved by EHS & Chair. rDNA approval #14-01r1

10/26/2015 – Protocol “overproduction and purification of codon-optimized clones of dirigent protein from may apple plants through E.coli to for structure-function analysis of amino acid variants via crystallography”. PI: Dr. Audrey Lamb. NIH rDNA exempt (III-F). RG1/BL1. PI indicated will use BSL2. Does not need committee review. Reviewed and approved by EHS & Chair. rDNA approval #21-10.

B) EHS reports

EHS (Mike Russell): no rDNA problems, violations of the NIH Guidelines, or any rDNA research-related accidents/illnesses have been discovered, identified or reported to EHS since the previous meeting (01/15/2015).

EHS (Mike Russell & Sean Hadley) provided overview of proposed Blackboard site for Committee. Will be a secured site to which only committee representatives have access. Will provide the ability for meeting information, protocols to be loaded for members so they can perform reviews ahead of scheduled meetings. Site can also be used for collaboration and communication via either blackboard function or through SKYPE embedded in site. Will allow for a member to participate in a meeting in the event they are unable to physically be present at meeting site. EHS will setup site, enroll members and notify when available for access.

C) Other - None

D) Notation of any planned future events or meetings

Tentatively schedule meetings for 4th Tuesday of every month to put on the calendar. IF we don't need to meet we can cancel.

Next 4th Tuesday in November (Nov. 24) but that is Thanksgiving week. Depending on receipt of PI modifications will schedule accordingly and promptly as long as meeting is posted on EHS website 5 business days in advance.

Meeting Adjourned at 6pm.