

NCI-FREDERICK INSTITUTIONAL BIOSAFETY COMMITTEE (IBC) INSTRUCTIONS: REPORTING RECOMBINANT DNA EXPERIMENTS

This is a selective guide to the recombinant DNA (rDNA) proposal registration forms. It is not meant to be comprehensive. The Principal Investigator has the option of completing either Form A (standard registration form) or Form B (narrative description form). **Do not** complete both forms. In the NIH Guidelines for Research Involving Recombinant DNA Molecules experiments are classified according to their potential for biological hazards. Before completing either of the registration forms, check Section III page 11 of the Guidelines and ascertain the classification of your work. Your work may include experiments that fall into more than one class of the Guidelines. For instance, E. coli cloning work is mostly Class III-F-5, expression of rDNA genes in cell culture may be III-D or III-E and animal work will be III-D-4a or b. You are asked to report each Class of experiment separately. Some work of minimal hazards (i.e., Class III-F-5) is exempt from the Guidelines, however it must be reported.

1. Registration Documents

Any rDNA proposals involving animals must be reviewed and approved by the ACUC and the NCI-Frederick IBC Technical Review Subcommittee (TRS) before being submitted to the IBC for final review and approval. Submission to the ACUC and IBC TRS should be made at the same time. Recombinant DNA experiments involving animals cannot be initiated before IBC approval is granted.

Any pathogens/human blood/OPIM¹ used in rDNA experiments must also be registered with the NCI-Frederick IBC.

Exempt work includes:

- (A) rDNA containing less than 1/2 of a eukaryotic viral genome propagated in cell culture. (Class III-F-5 and Appendix C I)
- (B) Work involving E. coli K12 host-vector systems. (Class III-F-5 and Appendix C II)
- (C) Work involving Saccharomyces cerevisiae host-vector systems. (Class III-F-5 and Appendix C III)

Non-Exempt work includes:

- (A) Experiments including human or animal pathogens as host-vector systems. (Class III-D-1)
- (B) Experiments involving infectious virus or defective virus plus helper in tissue culture. (Class III-D-3)
- (C) Experiments involving animals. This includes the use and creation of transgenic animals. (Class III-D-4)
- (D) Experiments not included in Class III-A, III-B, III-C, III-D and III-F are classed III-E. They include the following:
 - (i) rDNA molecules containing less than 2/3 genome of an eukaryotic virus propagated in tissue culture, no helper virus being present.
 - (ii) The NCI-Frederick IBC place experiments involving the use of defective retrovirus vectors with an enabling packaging cell system in Class III-E. Where there is the potential for infection of human cells, experiments will be performed at BSL 2.

2. Amendments to the Recombinant DNA Registration Document

The NCI-Frederick IBC should be notified, in writing, when there are any changes made to the rDNA registration document. In some cases, a new Registration Form will need to be completed.

In instances where nonexempt rDNA changes are proposed, review by the IBC TRS will be initiated and, if approved, submitted to the IBC for approval. Where animal protocols are proposed as an amendment, review and approval by both the ACUC and IBC, TRS is required before submission to the IBC.

These amendments include:

- (A) Changes in the materials being used. These include upgrading host-vector systems (from "Exempt" to "Non-Exempt"), changes in the amount, type and manipulation of virus being used and the use of mammalian cell culture, pathogens or OPIM.
- (B) Changes in protocol that reclassify "Exempt" experiments as "Non-Exempt" (mentioned above).
- (C) Initiation of animal protocols associated with materials registered.
- (D) Personnel additions and/or deletions.
- (E) Terminations of registered rDNA programs and/or a change in the principal investigator(s) associated with these programs.

¹"Other potentially infectious materials" means:

- (1) The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, all body fluids in situations where it is difficult or impossible to differentiate between body fluids.
- (2) Any unfixed tissue or organ (other than intact skin) from a human (living or dead).
- (3) HIV-containing cell or tissue cultures, organ cultures, and HIV or HBV-containing culture medium or other solutions, and blood, organs or other tissues from experimental animals infected with HIV or HBV.

Current NIH Guidelines can be found at: <http://www4.od.nih.gov/oba/rac/guidelines/guidelines.html>
If you have any questions please call EHS at x1451.

EHS, BSO
October 2003

REGISTRATION OF RESEARCH WITH RECOMBINANT DNA MOLECULES

IBC # _____ PATHOGEN # _____ ASP # _____

DATE RECEIVED _____ APPROVAL DATE _____

DO NOT WRITE IN ABOVE SPACE

1. Principal Investigator: _____ Telephone: _____

Bldg/Rm: _____ Organization: _____ Program: _____

Project Title: _____

2. Briefly describe your project in **lay language** for IBC review. If appropriate you may attach a one-page summary of the project. Additionally describe the equipment and procedures used to safely conduct this protocol or attach written SOPs, which address any potential hazards (i.e. spill procedures, biomedical waste disposal, etc).

3. Name of organism(s) used as host (cloning vehicle):

a) Prokaryotes: _____ (e.g., E. coli K12)

b) Eukaryotes: _____ (e.g., mammalian cell lines)

c) Higher animals: _____ (e.g., mice)

Animal Study Proposal # _____ (**Attach copy**)

4. If applicable describe use of animals in this experiment (attach separate sheet if necessary).

5. For work conducted using animals, is there any possibility of viral vector sequences recombining with endogenous or exogenous helper virus to produce new and unpredictable forms of infectious virus?

YES NO Please explain:

6. Nature of gene sequences inserted in the recombinant (give detailed description, attach catalogue description if obtained commercially).

7. If virus is used, check appropriate statement(s):

a) Quantity: Whole virus [] <2/3 viral genome [] <1/2 viral genome []

b) Use: Vector [] Donor of genetic information []

c) Is virus replication competent? [] YES [] NO

d) Is virus capable of infecting human cells? [] YES [] NO

e) Classification: Prokaryotic virus [] Name_____

Eukaryotic virus [] Name_____

Oncogenic virus [] Name_____

Risk level: High [] Moderate [] Low []

Infectious agent [] Name_____

Risk level: BSL 1 [] BSL 2 [] BSL 3 [] BSL 4 []

f) Explain the function of the foreign genetic material in this experiment:

8. Vector(s): List specific phage, virus or plasmid and the function of each:

a) If you are using a mammalian expression system please provide comprehensive description of the system (attach information as necessary).

b) Will viral based promoters be utilized in the research? [] YES [] NO
If yes, please provide a detailed description (attach information as necessary).

c) Will human or amphotropic viral vectors be utilized? [] YES [] NO
If yes, please provide a detailed description (attach information as necessary).

Is the vector replication competent? [] YES [] NO

What is the host range:

9. Are plant or animal cells to be exposed to the recombinant? [] YES [] NO

a) If yes, describe the potential hazards:

b) List cells or cell lines to be used:

c) What infectious virus, oncogenic agents or toxins will be produced during this work?

d) Does the possibility of recombination with endogenous virus exist? [] YES [] NO

10. Is a deliberate attempt made to obtain expression of foreign gene(s) in the cloning vehicle?
[] YES [] NO

If yes: What proteins?

11. Are recombinant organisms/molecules:

A. Genetically modified microorganisms or genetic elements from organisms listed on the CDC List of Select Agents (42 CFR 73, 9 CFR 121 & 7 CFR 331) shown to produce or encode for a factor associated with a disease? YES [] NO []

B. Genetically modified microorganisms or genetic elements that contain nucleic acid sequences coding for any of the toxins listed on the CDC List of Select Agents (42 CFR 73, 9 CFR 121 & 7 CFR 331) or their toxin subunits? YES [] NO []

12. Using the current NIH Guidelines, give specific reference for classification of your experiment:
(Include Section, Item, and Page number)

13. Describe **potential hazards** associated with the use of recombinant material for this protocol:

14. Describe the equipment and procedures used to safely conduct this protocol and attach written SOPs, which address any potential hazards:

15. Have all personnel associated with this protocol (including animal caretakers) been instructed and trained in the practices and techniques required to ensure safety and the procedures for dealing with accidents? [] YES [] NO

If yes, please attach a roster of all personnel with signatures indicating that they have been informed of potential hazards, safe work practices, availability of medical surveillance and that they understand and will follow approved laboratory practices and procedures.

16. List building and room(s) where work will be conducted (including animal work to support this protocol):

If an individual room has been designated for work at more than one Biosafety Level (i.e., BSL 1 and BSL 2), the highest degree of physical containment and work practice should apply at all times.

	Lab	Animal Facility
a) BSL 1	_____	_____
b) BSL 2	_____	_____
c) BSL 3	_____	_____

I attest that the information contained in this application is accurate and complete. I agree to comply with the NIH requirements pertaining to shipment and transfer of recombinant DNA materials. I acknowledge my responsibility for the conduct of this research in accordance with Section IV-B-4 of the NIH Guidelines.

I will not carry out the work described in the attached application until it has been filed with the IBC or, when necessary, until it has been approved by the IBC and all requirements have been met.

Principal Investigator _____ Date _____

Animal Facility Manager: See last page

DO NOT WRITE BELOW THIS LINE

This Registration Document is approved by the NCI-Frederick Institutional Biosafety Committee.

Secretary, NCI-Frederick, IBC _____ Date _____

Chairman, NCI-Frederick, IBC _____ Date _____

Note: Return completed form to Biosafety, Bldg. 426
EHS, BSO
October 2003

IBC #: _____

ASP #: _____

To Be Completed by Animal Facility Manager (As applicable):

Animal Facility

a) ABSL 1 _____

b) ABSL 2 _____

c) ABSL 3 _____

I attest that I have been informed of any potential hazards associated with this protocol and have informed my employees of the risks. All personnel associated with the protocol have been instructed of and will follow approved laboratory safety procedures.

Animal Facility Manager _____

Date _____