

## RECOMBINANT Nucleic Acid Risk Assessment

Principal Investigator:

Biosafety  
Certificate #

Project title:

*Dual Use Research is biological research with legitimate scientific purpose, the results of which may be misused to pose a biologic threat to public health and/or national security.*

**1. This project involves Dual Use Research (check all that apply):**

- renders a useful vaccine ineffective;
- adds antibiotic resistance to a pathogenic species affecting response to a clinically useful drug;
- enhances pathogen virulence;
- increases pathogen transmissibility;
- widens a pathogen's host range;
- lets a pathogen evade diagnostic or detection modalities;
- enables weaponization (e.g., environmental stabilization of pathogens).
- unknown
- none of these apply
- other (if selected, please describe below)

**2. Host / Vector / Gene information (check all that apply):**

- Yes  No Insertion of foreign DNA or RNA into a vector or organisms to clone or express it;

**DNA or RNA to be cloned:**

- Yes  No DNA or RNA is from a Risk Group (RG) 2 or RG 3 organism;

- Yes  No DNA or RNA represents more than two thirds of the genome of an RG 1 or RG 2 organism;

- Yes  No DNA or RNA inserted encodes a known oncogene;
- Yes  No DNA or RNA encodes toxin molecules with a LD50 of < 100 nanogram/kg of body weight;

**Vector to be used to introduce foreign DNA or RNA into the host:**

- Yes  No is from an RG 3 agent;
- Yes  No is an RG 1 or RG 2 virus that infects eukaryotic cells and contains more than two thirds of the viral genome;

**Host**

- Yes  No is a cell or organism *other than E.coli K 12, Saccharomyces cerevisiae, Bacillus subtilis, or Bacillus licheniformis*;

If yes, describe

**3. Human Gene Transfer**

- Yes  No the project will involved the deliberate transfer of recombinant DNA or RNA into one or more human subjects.

**4. Recombinant DNA Materials**

Vectors will be:  Constructed in lab  Purchased from vendor (describe)  Obtained elsewhere (describe)

Describe the host organism(s) used		
Host organism	Genotype	Risk Group (see PHAC PSDS or ATCC data sheet)
H1		
H2		
H3		
H4		

Viral vectors - if viral, include the % of the viral genome remaining (ex. poxvirus, adenovirus, retrovirus, etc.).		
Name, Class, % genome	Replication competent?	If replication deficient, explain mechanism
VV1		
VV2		
VV3		
VV4		

Other vectors (ex. nonconjugative, conjugative, mobilizable, lamboid, F bacteriophage, etc.)		
Name and Class	Host range?	Describe host range
OV1		
OV2		
OV3		
OV4		

Inserted DNA source [specify nature/gene ex. genomic, cDNA, synthetic, coding or non-coding and biological activity (ex. structural protein, enzymatic protein, oncogene, toxin, cell growth, etc.)]	
D1	
D2	
D3	
D4	
Helper virus required:	
Foreign gene expression (specify protein, toxin, antigen, etc.)	

**5. This project involves greater than 10 L of biohazardous/infectious material culture at one time (single or multiple vessel):**  Yes  No

**6. Target recipient of vector-rDNA combination (specify species or cell line(s) used):**

- Tissue culture:**
- Animals:**
- Plant cells:**
- Plants:**
- Gene therapy**  
(specify host)
- vaccine** (specify  
target recipient)

**7. Physical containment level required (see MUN's Matrix for the Assessment of Risk Group):**

**8. How will the rDNA be treated prior to disposal?**

PI Signature

Date

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**Institutional Biosafety Committee Approval**

*Biosafety Officer*

*IBC Chair*