UNIVERSITY OF HONG KONG

For use by the Biosafety Committee
Application Number:-

Form RA1

RISK ASSESSMENT FOR AN ACTIVITY INVOLVING WORK WITH BIOLOGICAL AGENTS (includes viruses, bacteria, parasites or fungi, and materials where these agents may be present eg. clinical samples)

The following is a pilot version of a risk assessment form for work with pathogens including viruses, bacteria, parasites or fungi. The form is intended to help identify appropriate safe working practices. Please expand boxes and add lines etc as required.

The risk assessment form is divided into two parts an administrative section and the assessment part.

The aim is to take the scientist proposing the work through the process in a logical and systematic way. It is hoped that the structure provided within the format itself will assist researchers in organising their thought processes and that it will indicate to them those aspects of specific types of work which need to be given particular attention.

As it stands the form is primarily aimed at risk assessments where human health and the prevention of unintentional infection is the main concern. The form may need modification or expansion before it would be totally suitable for infectious work in animals or for use in laboratories where environmental issues are the primary concern or where a large proportion of the work involved say gene therapy or the use of transgenic animals/plants.

PART 1 ADMINISTRATIVE DETAIL

1. PERSON/S RESPONSIBLE FOR THIS WORK (PRINCIPAL INVESTIGATOR)	
Name:	Position:
Faculty:	Department:

2. OTHER STAFF INVOLVED					
Name	Position and Experience	Faculty	Department	Start date	Finish date (when known)

Review History			
	Review 1	Review 2	Review 3
Due Date of Review			
Date Carried out			
Carried out by (initials)			

3. PERSON CARRYING OUT THE RISK ASSESSMENT			
Name:	Position:	Faculty:	Department:
Proposed start date for this work:-		Proposed finish date (if known):-	
Date risk assessment undertaken:-			

4. LOCATION OF ACTIVITIES *Give details of where different activities will take place e.g. include manipulation, growth, storage, disposal, centrifugation etc.*		
Activity	Room	Containment Level

BMBL in the following section refers to the 5th Edition of *Biosafety in Microbiological and Biomedical Laboratories*. The full version or individual parts of the text in pdf downloadable format can be found at:- http://www.cdc.gov/OD/ohs/biosfty/bmbl5/bmbl5toc.htm. The whole text is also available on the university safety office website under the safety manual heading and the subheading of biosafety. The University Biosafety committee will accept the classification of microorganisms detailed in this publication.

PART 2 RISK ASSESSMENT

1. PROJECT TITLE

2. SUMMARY OF THE ACTIVITY INCLUDING AN OVERVIEW OF THE PROJECT *This information should provide a simple explanation of the work so that the average member of the public can understand. If presenting the scientific goals poses problems in relation to intellectual property rights or commercial sensitivity please discuss the issues with the Biological Safety Officer.*
i. Overview of the work:
ii) Description of the procedures: (Please describe the types of procedures to be carried out. This might include growth, purification, storage and administration to animals. Identify any procedures that might require additional controls e.g. the use of sharps, production of aerosols etc)
iii) Substances used: (Section 3 has details of specific organisms, however where appropriate give details of materials used such as clinical and environmental samples)
iv) Quantities and frequency used: (This is vital if potential exposure and hence risk is to be assessed properly. Please indicate the scale of the work in terms of the maximum culture volumes and the likely number of times the procedures will be carried out.)

3. HAZARDS ASSOCIATED WITH THE WORK		
3.1a Biological agents to be cultured deliberately (please insert rows if necessary).		
Name	Strains	Classification (BMBL)

3.1b Biological agents which may be incidentally present (please insert rows if necessary).

3.2 Are any of these strains known or suspected of being resistant to standard drugs or antibiotics? Please indicate if any of the strains are attenuated or have increased virulence.
3.3 Survival of the agent. What form is the agent present in, for example with bacteria spores or vegetative forms may increase survival? With viruses polyhedron proteins function similarly. Are there any further issues about the agents survival e.g. resistance to disinfectants?
3.4 Give a brief overview of the natural history of the agent/s including, associated disease/s, dose and route of natural infection. (BMBL agent summaries may help in formulating this section)
i) Identify potential routes of infection in the laboratory:-

Percutaneous Yes ☐ No ☐	Inhalation Yes ☐ No ☐	Ingestion Yes ☐ No ☐	Splash in eye or mouth Yes ☐ No ☐	Animal bite/scratch Yes ☐ No ☐	Needlestick Yes ☐ No ☐

ii) Describe any disease that may be caused: (including symptoms, severity, routes of transmission etc)
iii) Identify any particular group of people who may be at increased risk: (for example, pregnant workers, under 18's, those with pre-existing disease that increases susceptibility)

4. CONTROLLING THE RISKS: (Hierarchy of Controls)

4.1. Substitution: Is substitution with a safer alternative practical? For example can a vaccine strain or laboratory adapted strain be used in the place of a pathogenic clinical sample? Please explain your conclusions.

4.2 Engineering Controls: (Specify if they are required e.g. for airborne microbiological hazards the use of a biological safety cabinet may be necessary, if so, identify the type required - Class 1, Class 2 or Class 3)

4.3 Administrative controls:

i. Is the work adequately isolated/ segregated?

a. Is/ are the room(s) shared with other workers not involved directly in this activity? If so give details. Also indicate arrangements for maintenance staff and cleaning arrangements.

b. Is access to the laboratory restricted? Please provide details.

ii. Assignment of Containment level: please specify the containment level required and any other control measures necessary. Local codes of practice may be referenced. Other controls may include a stringent sharps policy, limiting the quantity of agent used, the prohibition of lone working or specifying the level of supervision required,

iii. Waste disposal procedures: Add lines as required. Liquid waste might include cultures and culture medium, while solid waste includes items such as culture flasks. Clinical Waste might include human samples, blood, carcasses, sharps etc

	Detail of type of waste	Treatment before disposal	Validation of inactivation	How disposed
Liquid Waste				
Solid waste				
Clinical Waste				

iv. Emergency Procedures: These should be detailed in the local code of practice, a brief summary is appropriate here.
v. Transport: Transport within the laboratory and between laboratories (including between campuses) should be documented in the local code of practice, a brief summary is appropriate here. How will these agents be transported within the laboratory to avoid splashes and spills e.g. between the incubator and safety cabinet?
4.4 Personal Protective Equipment (PPE): Please indicate what is required. Laboratory Coats must always be worn but the need for gloves, aprons, eye and respiratory protection etc will vary.

Lab Coat	Gloves	Eye or face (specify if yes)	Other (specify)
Yes ☐	Yes ☐ No ☐	Yes ☐ No ☐	

5. ENSURING CONTROL MEASURES ARE USED AND MAINTAINED

Please indicate what, if any, checks on control measures are required e.g. annual maintenance of biological safety cabinets (also note the frequency of inspection needed).

6. OCCUPATIONAL HEALTH ISSUES

Please indicate if environmental or personal monitoring is required. (This is required only in exceptional circumstances where biological agents are concerned. If in doubt discuss the issue with the University BSO)
Please indicate if Health Surveillance is required. (Advice can be obtained from the University Health Service and is only appropriate in a few circumstances).
Please indicate whether there is a vaccine available for any of the pathogens handled in this work and who will receive it. (All those handling clinical specimens are expected to receive hepatitis B virus vaccination with post immunisation monitoring of antibody levels to ensure effective protection has been achieved. For other pathogens advice may be sought from the University Health Service)

7. INSTRUCTION INFORMATION AND TRAINING
Please indicate if there any specific training requirements:

8. SIGNATURES	
The name and signature of the person making the assessment is required. Heads of department may also wish to sign but this is not necessary, however if the assessment is made by a student (undergraduate or postgraduate) or research assistant then their supervisor or PI should also sign.	
Name of Assessor: Signature:	Date:
Name of Reviewer: Signature:	Date:
Head of Department: Signature:	Date: