Boston University
Institutional Biosafety Committee (IBC)
January 23, 2024 Meeting Agenda
Location: Zoom and/or by phone
Start time: 12:00 PM End time: 1:10 PM

Members Present:	R. Ingalls, B. Slack, E. Muhlberger, I. Afasizheva, R. Davey, V. Gouon-Evans, T. Winters, R. Morales, C. Thurman, J. Keeney, R. Timmerman, E. Loechler, V. Britton (joined 12:09 PM), N. Dey, S. Ghosh
Guests Present:	C. Fernald, J. Wood, A. Ahmad, A. Broos-Caldwell, A. Ellis, P. Richmond, T. Killeen, M. Fitzgerald
Staff Present:	C. McGoff, L. Campbell

I. Review of December 12, 2023 IBC Meeting Minutes
No concerns were voiced.
Motion: Approved
For: 14; Against: 0; Abstain 0; Absent: 1

II. Chair's Report: Nothing to report.

III. New Business:
A. IBC Office Updates: Members were informed that suggested changes to the RIMS application from the IBC office and committee are in process; these changes are anticipated to go live within the next 3-4 weeks.
B. Incident Report: Members were presented with and informed of an incident from 11/27/23, its risk assessment, and the corrective action taken to prevent further occurrence
C. Review of Research Occupational Health Program (ROHP) Report: Nothing to report.
D. Environmental Health and Safety (EHS) Report: Nothing to report.

IV. Protocol Review
1. rDNA/Bhz – New Application

BUA	(PI)	Title	BSL	ABSL	Campus
2633	[redacted]	Generation and use of pseudoviruses for infection and neutralization assays	2	N/A	BUMC
Primary Reviewer: Rob Davey		Secondary Reviewer: Elke Muhlberger			
Applicable NIH Guidelines: III-D-1-a, III-D-2-a, III-E-1					
Meeting Comments: The goal of this protocol is to study virus entry into the cells by using pseudotyped viruses and to use the knowledge in the development of therapeutics targeting virus surface proteins (glycoproteins). The therapies include antibodies and small molecules. Pseudotyped recombinant lentivirus and lab strain of vesicular stomatitis virus (VSV) are used in the protocol. VSV is an FDA approved vaccine vector and recombinant lentiviruses lack genes important for disease in humans. Third and second generation lentivirus systems are used with second generation reserved for situations where titers from third generation systems are not useful for the proposed work. PI has extensive experience working with recombinant lenti and VSV systems and is the only personnel in the protocol. PI indicates that the titers of the pseudotyped viruses can be as high as 10^{10}. Additional safety measures may be necessary when such concentrated virus stocks will be used. PPE used includes, standard BSL2 equipment; lab coat, gloves and eye protection. Recombinant work will involve production of the viruses from plasmids. For VSV, a western reserve vaccinia virus strain encoding T7 polymerase will be used. Appropriate PPE, signage and restricted access to the space are indicated as precautions. Vaccination will be offered and personnel warned of the precautions needed if pregnant. Committee noted that exclusion of pregnant women is not necessary as individuals vaccinated with Jynneos vaccine may safely work with vaccinia virus. Rhesus and macaque serum and plasma from collaborators will be used. It was also noted that EHS will include additional slide in the BioRAFT blood borne pathogen training module to emphasize necessity of extra care while working with primary materials from non-human primates.Clean up is 10% fresh bleach for 30 minutes. The following will be communicated to the PI:					

- The protocol indicates virus concentration in the stock can go up to 1 x 10^10. As risk assessment is a combination of both titer and volume, it would be good to first state the norms for the titers and volumes used and then indicate the maximum amounts of the high titer virus stock will be used. If high titer work at high volume is the norm, additional protection (such as face shield, disposable gown, double gloves) and decontamination of the shared space would be warranted. Please clarify and add statement as appropriate.
- The protocol proposes to use vTF7-3 for production of T7 RNA polymerase in cells. vTF7-3 is replication-competent western reserve strain and poses the risk of lab infection of unvaccinated individuals. Committee recommend replacing vTF7-3, with the replication-deficient MVA-T7 strain for this purpose. If you must use vTF7-3, please provide justification and safety measures to be adopted during the work.
- Rhesus and macaque serum and plasma from collaborators will be used. Indicate this is checked for Herpes B or precautions taken.
- Add the word 'leak-proof' in the transportation of biohazard section.
- IRB approval is not necessary for the NHP plasma or serum.
- For the human plasma or serum samples, if they are obtained from deidentified donors, IRB approval is probably not required.

BUA Site Assessment: All personnel training are current. All BSCs are duly certified and all centrifuges are in working condition. The lab is appropriately equipped to perform all proposed work.

2. rDNA/Bhz – Three Year Renewal

BUA	(PI)	Title	BSL	ABSL	Campus
934	[redacted]	Orthopedic Research Characterization of Skeletal Stem Cells and Cell Types in Mouse and Human Fracture Tissues Defining Serum Proteome Across Human Fracture Healing	2	2	BUMC

Primary Reviewer: Barbara Slack	Secondary Reviewer: Colleen Thurman

Applicable NIH Guidelines: Sections III-D-1-a, III-D-2-a, III-D-4-a and III-E-1; Appendix B-II-D and G-II-B

Meeting Comments: This protocol investigates various aspects of bone healing after surgery or trauma. They use mouse primary cells and cultured cell lines to study bone healing in vitro. They also use transgenic mouse models with specific genes that are fluorescently tagged to track bone stem cell lineages by FACS analysis. They also collect bone marrow cells from bone samples during joint replacement in BMC operating room, as well as serum samples for proteomic and transcriptome analysis and single cell RNA sequencing. In some experiments they will also use lentiviral vectors to introduce shRNA or cDNA encoding transcriptional regulators into cultured mouse and human cells, and into primary cells isolated from mice, in order to test their role in tissue repair. Lentiviral vectors will be purchased as viral particles from the Broad Institute, or as plasmids that will be packaged in the lab. in HEK 293 cells. Packaging systems used will lack the HIV envelope protein. Transgenic mice will be treated with tamoxifen to induce expression of genes of interest, and the animals will be handled in the CCL2 room at LASC by trained personnel wearing appropriate PPE. Handling of tamoxifen is described adequately in the application. A lentivirus expressing the polyoma middle T antigen will be used to immortalize human osteocyte cells. Animals will be X-rayed using a portable dental X-ray device or in a fixed cabinet. PI has appropriate IRB approvals for the use of human primary materials and IACUC approval for the animal work. The following will be communicated to the PI:

- Section I.2. Since this is a 3 year resubmission, table for amendments and annual renewals doesn't need to be filled in.
- Section III. 1. Experience of PI should be filled in

- Section III.1/2 Personnel-please correct PI title (he is currently described as a grad student); please provide a brief summary of the PI's experience. rDNA training needs updating
- Please update ROHP clearance dates.
- Section VII.1 Layman's Terms- please shorten this section to three or four sentences.
- Section VIII.5- Certification date of the BSC needs update.
- Section VIII.7- Solid waste disposal section should specify the use of double red bag-lined biohazard boxes that will be sealed and marked for incineration (when disposing of human waste).
- Section A.- Source for first item should be ATCC (not ACTT-assuming this is a typo).
- Section B. Please specify which OR and which clinic in the table.
- Section H. Please list the specific genes that will be introduced into Eukaryotic cells, as well as the species from which they are derived. Please specify the commercial source of the packaging system that will be used.
- Section H. Animal experiments. Unless lentiviruses are going to be injected into these transgenic animals (which doesn't appear to be the case based on the details provided under Lab Procedures) this section needs to be filled out. If the intention is to inject mice with lentiviral vectors, then the proposed experiments should be described in the Lab Procedures section.

BUA Site Assessment: BSCs are duly certified. Members need updates on rDNA/IBC policy training. The lab is not using any lentivirus vector at present but may use later. They have appropriate transportation container; they are using human tissues and have microtome in the lab.

3. Bhz – Three Year Renewal

BUA	(PI)	Title	BSL	ABSL	Campus
2505	[redacted]	Rod outer segment structure: determinants and its effect on the photon response	2+	N/A	BUMC

Primary Reviewer: Robin Ingalls	Secondary Reviewer: Steve Niemi

Applicable NIH Guidelines: N/A

Meeting Comments: This protocol study nonhuman primate retinal photoreceptors response to light. Most studies on photoreceptors utilize frogs and toads but it remains unclear if human and non-human primate photoreceptors have a similar response to stimulation. This protocol does not handle any primates but receive eyes from Rhesus macaques from being used for another study. However, the risk of herpes B infection in the unfixed tissue remains and the PI is experienced in these procedures and takes appropriate precautions for laboratory staff. Transportation of tissue between labs occurs within the same building and is appropriate. Eye cups are dissected in the PI's laboratory using a dissecting microscope. The PI notes that eye wear is not used as part of the PPE for this procedure because the microscope provides protection from splashes. Retinal studies are performed in a perfused chamber with full PPE. Sharps are necessary given the dissection of the eye cup and retina. The following will be communicated to the PI:

- Section III. Personnel Information – [redacted] and [redacted] needs BBP training.
- Section IV. Research Laboratory Facility Information – ABSL2 can be unchecked for both rooms since only animal tissues (no live animals) are involved.
- Section VII.3. It is not clear how researchers are protected from unintended splash or droplets during NHP eye dissection procedures. Please clarify. IBC recommends use of plastic shields hanging from the eye-pieces of the microscope.
- Section VIII.11. [redacted] name is mentioned but she has left the lab. Please remove this reference.

BUA Site Assessment: It was noted the protocol shouldn't be listed at BSL2+. PI and other members need BBP training. The microscope work does appears to have no serious biosafety risks.

V. List of Protocols reviewed by DMR (not discussed in the meeting)

A list of protocols that were reviewed by DMR was displayed in the meeting.