



Boston University
Institutional Biosafety Committee (IBC)
May 18, 2021 Meeting Minutes
Location: Zoom and/or by phone
Start time: 12:00 PM End time: 1:20 PM

Members Present: C. Abraham, R. Ingalls, I. Afasizheva, E. Muhlberger, B. Slack, R. Davey, X. Brown, E. Loechler (Joined 12:49 PM), P. Liu (Joined 1:01 PM), R. Morales, T. Winters, R. Varada, C. Thurman, R. Timmerman, V. Britton, J. Barton

Guests Present: C. Sulis, P. Richmond, J. Davis, A. Ahmad, J. Wood

Staff Present: S. Ghosh, C. McGoff, J. Hutchinson

I. Review of April 27, 2021 IBC Meeting Minutes

No comments or questions were voiced.

Motion: Approve

For: 13; Abstain: 1; Absent: 2

II. New Business

A. Safety & Quality Assurance Program (SQAP) Report

1. A suggestion from a IBC member that there needs to be a policy on how biohazardous materials are handled in a lab if no biosafety cabinet is available to the PI was mentioned.

2. The committee was informed that a response was received from NIH OSP on the viral vector exposure incident that was reported to the IBC last month; they indicated that no additional information is needed.

3. In follow-up to discussion at last month's IBC meeting, Dr. Carol Sulis spoke to how brain tissue samples obtained from different sources are disinfected and disposed of at Boston Medical Center (BMC). She indicated that BMC follows prion-specific disinfection protocols (such as physical separation of the operating space, use of all disposable equipment and incineration of waste) only when the presence of prions is certain or highly suspected. In the laboratory setting, when brain tissues are being minced or homogenized, exposure risk to the researchers exists. Therefore, unless samples are tested for the presence of prions, standard prion-specific disinfection methods are recommended. The Director of Research Safety indicated that EHS will develop a SOP to document the safe handling of brain tissues, nerve tissues and cerebrospinal fluids. Members suggested that information be added to the BSL1/2 training course to inform researchers of appropriate precautions when working with brain tissue samples.

B. Research Occupational Health Program (ROHP) & Environmental Health and Safety (EHS) Report

ROHP Report:

1. 4-30-21: Researcher tested positive to SARS-CoV-2

A Post-Doc Associate working in NEIDL BSL2 and BSL3 laboratory space tested positive for SAR-CoV-2 which was later presumed to be related to amplicon exposure.

2. 5-3-21: Researcher tested positive to SARS-CoV-2

A Research Scientist working with SAR-CoV-2 gene sequence expression plasmid tested positive for SARS-CoV-2 which was later presumed to be related to amplicon exposure.

3. 5-3-21: Finger laceration with microtome blade

A student while wearing regular gloves sustained a laceration to her right middle finger. She went to clean the microtome machine with a chemical wipe pad thinking she had already removed the blade but then realized as she felt something sharp that she had forgotten to remove the blade prior to cleaning the machine. The researcher required treatment at the emergency room and since has followed up with

ROHP. She was working with non-transgenic rat tibia specimens that were fixed in 10% formalin and paraffin embedded. No biological hazardous agents were involved with this specimen and the machine was cleaned prior to use. A biologic research laboratory report was sent to BPHC. **EHS Report:** EHS staff met with the student and PI to discuss the microtome incident and determine ways to prevent reoccurrence. The PI verified that there were no biologics involved and that the equipment had been cleaned prior to slicing 10% formalin-fixed paraffin-embedded rat tissues. The researcher had forgotten to remove the blade before starting to clean when she inadvertently sustained the injury to her finger. Although there were cut resistant gloves available, she was not wearing them at the time of incident. She notified her PI immediately when the incident occurred and followed appropriate washing and reporting protocols with the ROHP. The root cause was lack of awareness and understanding of the procedure and lack of use of appropriate PPE. EHS instructed the PI to develop a SOP for the microtome and to retrain lab staff on safe operations for handling the blade, use of cut resistant gloves and cleaning procedures for the microtome. The student has already completed the Sharps Safety training as a refresher on BioRAFT. A member suggested that signage be posted by the machine reminding individuals to remove the blade prior to cleaning. EHS staff indicated that the appropriate SOP is posted.

III. Protocol Review

1. Bhz – Three Year Renewal

| BUA | (PI) | Title | BSL | ABSL | Campus |
|--|------|---|----------------------------------|-----------|------------|
| 2299 | | NEIDL Comparative Pathology Laboratory (NCPL) | 2 | N/A | BUMC |
| Primary Reviewer: Elke Muhlberger | | | Secondary Reviewers: Tom Winters | | |
| Applicable NIH Guidelines: N/A | | | | | |
| <p>Meeting Comments: The lab provides pathologic expertise to NEIDL PIs using translational animal models of emerging infectious diseases. Tissue samples derived from animals infected with BSL-3/BSL-4 agents are inactivated using formalin fixation and chemical deactivation methods approved by the IBC. Strict decontamination protocols are used, and samples are subsequently processed in BSL-2 laboratory spaces. Surface decontamination is performed using 70% ethanol and Mopec SaniPath disinfection spray. Manual and automated staining is done in BSL-2 laboratory spaces. The auto staining instrument is decontaminated bi-annually using quaternary disinfectant. Routine paraffin tissue processing will be performed for staining thin sections of FFPE blocks. Digital image analysis and storage of samples will also be performed in BSL-2 space. Work with animal tissue samples requires use of proper engineering, administrative and PPE controls, all of which are well described in the protocol. The PPE will be lab coats, gloves and goggles. Biological safety cabinets are not required for this project. Sharps use poses risk of sharp injury with contaminated sharps, but the PI describes in detail the procedure for proper cleaning of the microtome blade or cryostat to mitigate injuries. Liquid and solid waste disposal protocol is appropriate, no viable infectious agents will be stored in the laboratory. Access to the lab is controlled by keycard entry.</p> <ul style="list-style-type: none">Complete the DURC questions for 3-year renewals. <p>BUA Site Assessment: The lab has a exposure control plan. All personnel have medical clearance and their safety trainings are current.</p> | | | | | |
| Motion: Conditional Approval (Administrative Review) | | | For: 15 | Recuse: 0 | Against: 0 |
| | | | Abstain: 0 | Absent: 1 | |

2. rDNA/Bhz – Three Year Renewal

| BUA | (PI) | Title | BSL | ABSL | Campus |
|--|------|--|-------------------------------|------|--------|
| 2037 | | Molecular Determination of in vivo Cellular Signaling During Nerve Damage and Regeneration | 1 | N/A | BUMC |
| Primary Reviewer: Carmela Abraham | | | Secondary Reviewer: Xin Brown | | |
| Applicable NIH Guidelines: Section III-F-8 (exempt) | | | | | |
| Meeting Comments: The goal of this project is to study molecular details of nerve regeneration to identify novel targets and strategies for neurotherapeutics. To get physiological context, the group uses nematode <i>Caenorhabditis</i> | | | | | |

elegans as the model for their studies. Employing genetically encoded fluorescent calcium indicators, the lab measures cytoplasmic calcium dynamics throughout the regeneration process. They will also generate transgenic nematodes via microinjection of vectors into the gonads.

- Detail relevant experience for all personnel, including the PI.
- Clarify Changs role - all listed training is delinquent.
- Yadav and Chang need ROHP clearance.
- The project now uses both the Flow Cytometry Core and the Microarray Resource Core however, the protocol does not provide information on sample preparation for the flow cytometry core and the microarray core. Description of cell isolation procedures from *C. elegans* and RNA isolation needs to be included.
- Liquid waste (check spelling: 'waist') should be made to a 10% final concentration of bleach.

BUA Site Assessment: The lab is working to get everyone's medical clearance up to date. One (1) member needs to update their safety training in BioRAFT.

| | | | | | |
|--|---------|-----------|------------|------------|-----------|
| Motion: Conditional Approval (Administrative Review) | For: 15 | Recuse: 0 | Against: 0 | Abstain: 0 | Absent: 1 |
|--|---------|-----------|------------|------------|-----------|

3. Bhz – New Application

| BUA | (PI) | Title | BSL | ABSL | Campus |
|--|------|---|-------------------------------------|------|--------|
| 2515 | | Exposure of non-human primates to Risk Group 2 agents | 2 | 2 | BUMC |
| Primary Reviewer: Rob Davey | | | Secondary Reviewer: Colleen Thurman | | |
| Applicable NIH Guidelines: N/A | | | | | |
| <p>Meeting Comments: The overall goal of this protocol is to study immunological protection provided by vaccines based on vesicular stomatitis virus (VSV) vectors as well prior infection with OC43, a common coronavirus. The work involves treatment of animals with OC43 and VSV-based vaccines in ABSL2 containment and will also involve sampling of blood and analysis at BSL-2. The recombinant VSV is attenuated and OC43 causes mild disease in healthy people, both are RG2 agents. Immunized animals may later be used for challenge studies that are part of the PIs other IBC protocols. The protocol provides highly detailed descriptions of each of the laboratory procedures. The biosafety risks in the protocol include a) use of a NHP animal model, b) handling of sharps and c) decontamination of equipment and cages. Risk of Herpes B virus exposure and reporting/response procedures in the event of an exposure are described appropriately. This also applies to any accidental needle or sharp exposure. The protocol states extensive use of 5% Microchem Plus to decontaminate surfaces, cages and housing spaces. Procedures on animals are done a downdraft table, which acts as a BSC for larger animals. Needle and blade handling, which are the highest risk elements, are described in high detail to ensure safety. These include Luer-lock needles and syringes, needle blocks, and directly accessible sharps containers. Animal procedures are always performed by two members and on anesthetized animals; one member indirectly restrains the animal through the cage system and the other member handles the needle. The restraining person does not move until the needle is discarded. PPE includes goggles, face shield, surgical mask, shoe covers and head cover which mitigate risk of Herpes B virus exposure. Blood samples from animals are handled in a BSC. This is treated as BSL-2 due to the potential for OC43 or VSV contamination.</p> <ul style="list-style-type: none">• Multiple ARS members are available for the ABSL-2 studies. If they are going to be performing OC43 portions of this study, add them as personnel or consider amending the personnel section to include them for future studies.• Add intratracheal and intranasal inoculation for OC43 as procedures to be performed in this protocol to match the description in the IACUC protocol. It should not however, change any risk factors, or PPE.• Under PPE and Safety Equipment:<ul style="list-style-type: none">○ Q1 – Check Animal Handling.○ Q3 – Check Lab coat, gloves and Other.○ Q4 – Check Lab coat. | | | | | |

- Q7A - Be consistent with the exposure time for Mirochem Plus throughout the protocol (suggested: at least 10 minutes).
- Q10 states that biohazard materials are not being stored for this protocol but NHP blood may contain OC43 or other agents and may need to be stored for studies. Since the agents are listed on this protocol, it seems that blood samples may be stored.
- Hazardous Biological Agent Section A.2 indicates that VSV is attenuated and on rDNA Q15 it is marked as defective. The specific attenuation/defective aspect of the recombinant VSV should be included in the rDNA vector description section.
- In Section A.4 reference IACUC protocol PROTO202000034 Respiratory Diseases in NHP (approved 8/5/2020, amendment to add OC43 in review). PROTO201900012 is the PI's NHP filovirus protocol.

BUA Site Assessment: ROHP clearance and safety trainings are current for all members. Biosafety cabinet certifications expire in a month and are scheduled for recertification.

| | | | | | |
|--|---------|-----------|------------|------------|-----------|
| Motion: Conditional Approval (Administrative Review) | For: 16 | Recuse: 0 | Against: 0 | Abstain: 0 | Absent: 0 |
|--|---------|-----------|------------|------------|-----------|

4. rDNA/Bhz – Amendment

| BUA | (PI) | Title | BSL | ABSL | Campus |
|--|------|--|---------------------------------|-----------|------------|
| 2396 | | B cell activating factor in non-infectious complications of common variable immunodeficiency | 2 | N/A | BUMC |
| Primary Reviewer: Robin Ingalls | | | Secondary Reviewer: Ron Morales | | |
| Applicable NIH Guidelines: Section III-D-1-a, Section III-D-2-a, Section III-E-1 | | | | | |
| <p>Meeting Comments: This protocol is to study Common Variable Immunodeficiency (CVID), specifically B cell function and expression of the BAFF receptor, and how signaling through BAFF-R leads to autoimmunity and lymphoid hyperplasia. This amendment is to add human Burkitt's Lymphoma cell line and human induced pluripotent stem cells (iPSCs). Use of the iPSC requires lentiviral transduction of the reprogramming genes. The PI also added the use of CRISPR-Cas9 methodology for gene editing in the iPSCs to create knock-out cells. Members discussed that the research laboratory procedure section and the recombinant DNA section need to include more detail of the proposed work.</p> <ul style="list-style-type: none">• The source of the lentiviral vector system is missing (it states XXXX). It needs to be listed in the lab procedures section and in the rDNA table.• The detail of the composition of the lentivirus vector system including the generation number, replication competence, how they will be introduced into the cells, etc. should be described.• Indicate the source for the CRISPR-Cas9 system and how it will be introduced into the cells. Clarify if Cas9 and guide RNA are expressed in the same construct.• In the recombinant DNA section, the Prokaryotic and Eukaryotic experiments 'Host-Vector-Donor' questions and the 'Vector Packaging System' question need to provide more detail of the proposed work.• Clarify if NFκB will be the only gene to be edited by the CRISPR-Cas9. If not, describe the nature of the other genes to be edited.• The biosafety cabinet certification date has lapsed (1/29/19) and needs to be recertified.• The description for liquid waste treatment and disposal is incomplete. Describe how liquid waste will be treated and discarded.• Add the use of cryogenic gloves and face protection in the PPE section for handling of liquid nitrogen when storing and accessing samples. | | | | | |
| Motion: Conditional Approval (Administrative Review) | | | For: 16 | Recuse: 0 | Against: 0 |
| | | | Abstain: 0 | Absent: 0 | |

5. rDNA/Bhz – Amendment

| BUA | (PI) | Title | BSL | ABSL | Campus |
|---|------|--|--------------------------------|------------|------------|
| 2392 | | Circuit structure and dynamics in prefrontal-limbic networks | 2 | 2 | BUMC |
| Primary Reviewer: Barbara Slack | | | Secondary Reviewer: Rao Varada | | |
| Applicable NIH Guidelines: III-D-1, III-D-4, III-E-1, Appendix B-V, Appendix G-II-B, Appendix Q-1 | | | | | |
| Meeting Comments: This is an amendment of a proposal designed to study neurotransmission between the prefrontal cortex and anterior cingulate cortex in rhesus monkeys and mice. The study involves conducting survival surgery, infusion of anatomical tracers, <i>in vivo</i> electrophysiology, and postmortem analysis of fixed and frozen brain tissue. The amendment adds two (2) new personnel and removes one (1). Three (3) AAV viral vectors are added to the ones already approved for use in monkeys and mice, to be used for labeling of projection neurons. These will be obtained from other labs. The IACUC approval number has been updated. | | | | | |
| <ul style="list-style-type: none">Check the appropriate submission type; it should be an amendment, not a 3-year resubmittal. | | | | | |
| Motion: Conditional Approval (Administrative Review) | | For: 16 | Recuse: 0 | Against: 0 | Abstain: 0 |
| | | Absent: 0 | | | |