Boston University
Institutional Biosafety Committee (IBC)
November 19, 2024 Meeting Minutes
Location: Zoom and/or by phone
Start time: 12:00 PM End time: 12:39 PM

Members Present:	R. Davey, E. Muhlberger, I. Afasizheva, W. Lu, P. Liu, T. Winters, N. Dey, R. Morales, C. Thurman, M. Mazur, J. Keeney, V. Britton, S. Ghosh
Guests Present:	A. Ahmad, J. Wood, P. Richmond, C. Fernald
Staff Present:	C. McGoff, L. Campbell

I. Review of October 22, 2024 IBC Meeting Minutes

No concerns were voiced.
Motion: Approved
For: 13; Against: 0; Abstain: 0; Absent: 0

II. New Business:

A. **IBC Office Updates:** Nothing to report.

B. **Review of Research Occupational Health Program (ROHP) Report and Environmental Health and Safety (EHS) Report:** Members were provided with information on two (2) incidents and their corrective actions occurring in October 2024 on the Boston University Medical Campus; the incidents were reported to the BPHC.

III. Protocol Review

1. rDNA/Bhz – New Application

BUA	(PI)	Title	BSL	ABSL	Campus
2669	Fabio Petrocca	Characterization of Human T Cells to Improve Chimeric Antigen Receptor (CAR) T Cell Therapy	2	2	BUMC

Primary Reviewer: Rob Davey	Secondary Reviewer: M. Mazur
Applicable NIH Guidelines: Sections III-D-1-a, III-D-2-a, III-D-3 and III-E-1	

Meeting Comments: This protocol study how individual characteristics of a patient contribute to the outcomes of autologous Chimeric Antigen Receptor (CAR) T cell therapy for cancers. CAR T cell therapies are a new type of cancer treatment that uses a patient's own immune cells (specifically T cells) to find and kill cancer cells in the body. Blood will be collected from cancer patients and immune cells (PBMCs) purified. They will be modified to express recombinant T cell receptors that enable them to target the cancer cells. Outcomes in patients will then be correlated to what types of cancer are being treated. Blood will be collected by Hem/Onc Translational Research Laboratory biobank research staff at BMC through appropriate IRB and IBC approvals. Patient's T-lymphocytes in the PBMCs will be modified using lentivirus vector encoding engineered T cell receptor. The modified CAR T cells will undergo *in vitro* assessments for various tumor-killing activity using standard BSL2 laboratory practices and PPE. Both 2nd and 3rd generation lentivirus vectors will be used in the study. Disposal of liquid waste is fresh 10% bleach for 30 minutes. Solid waste is disposed in red bags and replaced when 75% full. Sharps used in the protocol will be handled with appropriate care. TRIzol will be used in a fume hood to avoid phenol inhalation hazard. The protocol appears to be making many cDNA constructs by standard molecular cloning, but committee noted that there is no mention of prokaryotic rDNA work in the protocol. The following will be communicated to the PI:

- Please change the lab location from [redacted] to [redacted]. Also add [redacted] for storing cells in liquid Nitrogen dewar
- The laboratory procedure appears to involve lots of plasmid cloning, E. coli transformation, plasmid preparation. But this is not mention in lab procedure section or in the recombinant DNA prokaryotic experiment section. Please state briefly that you will doing standard molecular cloning experiments including bacterial transformation, plasmid preparation, etc.

- Since there is no animal work in this protocol, please uncheck ABSL2 and check N/A.
- Complete the rDNA Prokaryotic experiments Host-Vector-Donor section.
- Please change the response in the Applicable NIH guidelines in Q19 to state "Sections III-D-1-a, III-D-2-a, III-D-3 and III-E-1".

BUA Site Assessment: Add procedures: Pipetting infectious liquid. Remove procedures: Opening containers under pressure. PI is the only member in the protocol. All safety trainings are current. 2 BSCs in [redacted] certified till 03/25. Fume hood certified till 03/25. The lab location is [redacted] and not [redacted]. The lab is not using Wescodyne as a disinfectant. No biohazardous material transportation is anticipated in this protocol. The protocol should not be designated as ABSL2 as there is no animal work being described in it. The flow cytometer is used by the lab in a core facility. The lab freezer and liquid nitrogen dewar which store biological materials are in [redacted] and [redacted] respectively.

Motion: Conditional Approval (Admin Review)	For: 13	Recuse: 0	Against: 0	Abstain: 0	Absent: 0

2. rDNA/Bhz – New Application

BUA	(PI)	Title	BSL	ABSL	Campus
2670	Tarik Haydar	NIH, NINDS R01 NS116418 7/2021-7/2026 Comparative Genomics of Precursor Diversity and Function. PI: [redacted], Co-I: [redacted] NIH, NINDS R01NS136246 04/01/2024-03/31/2029 Direct and Indirect Neurogenesis in the Mammalian Neocortex. PI: [redacted]	2	2	BUMC

Primary Reviewer: Inna Afasizheva | Secondary Reviewer: Colleen Thurman

Applicable NIH Guidelines: Sections III-D-1-a, III-D-2-a, III-D-4-a, III-E-1

Meeting Comments: The goal of this protocol is to elucidate the molecular mechanisms of how brain stem cells construct the cerebral cortex. To do this, they introduce plasmid vectors into the developing brain and then use laser scanning imaging to locate and follow the labeled cells. They also extract the cells and use variety of genomic techniques to investigate the dynamics of gene expression and chromatin accessibility in the cells. Their other work includes use of induced pluripotent stem cells (iPSCs) to construct spheroid models of the developing brain to study the genetic mechanisms of altered brain development in Down syndrome. They use standard PPE (gowns, gloves, eye protection) in all their work. They use 10% bleach or Wescodyne (2%) to decontaminate surfaces and other containers used in these studies. iPSCs used their studies are obtained from commercial suppliers. In some experiments they also use AAV vector that express neuronal cell-specific proteins. The following will be communicated to the PI:

- [redacted] needs to complete all safety trainings (LST, BSL1/2, BBP, Chem safety and rDNA/IBC policy training.
- [redacted] and [redacted] need to have ROHP clearance before they may start laboratory work.
- Mention brief procedural statement on the use of tracer compound in mouse brain.
- VIII.1. Check pipetting infectious liquid.
- VIII.3. Add cut-resistant gloves for vibratome machine (put as OTHER).
- VIII. 4. Why is a PAPR being used? Most ABSL2 projects can be performed with lab coat and gloves in a BSC +/- mask+eye protection if not using an engineering control.
- VIII. 5. Enter information about BSC to be used.
- Include the following Pending IACUC protocol number in the rDNA Animal experiments section.
- Why is the protocol ABSL2?
- It was not clear if iPS cells are transfected with any plasmid vectors created in the lab. If so, please complete the rDNA eukaryotic experiments section also (host-vector-donor).

- IACUC: [redacted] in review. Add this information in the rDNA animal experiment section.
- The applicable NIH guidelines for this protocol should be Sections III-D-1-a(if iPS cells are transfected with plasmids), III-D-2-a, III-D-4-a, III-E-1. Please update.

BUA Site Assessment: This is a new lab which recently moved from another state and is still in the process of setting up their space. Some of their lab spaces are still under renovation. Add procedure: Pipetting infectious liquid. Vibratome used for tissue sectioning need cut resistant gloves. Two of the three biosafety cabinets are certified and all fume hoods are certified. Biohazardous Boxes should always be double lined.

Motion: Conditional Approval (Admin Review)	For: 13	Recuse: 0	Against: 0	Abstain: 0	Absent: 0

Dr. Muhlberger served as the Chair for the review of protocol #3 and #4 because of conflict of interest.

3. rDNA/Bhz – Three-Year Renewal

BUA	(PI)	Title	BSL	ABSL	Campus
2342	Robert Davey	Identification of inhibitors of high containment virus infection	4	N/A	BUMC

Primary Reviewer: Elke Muhlberger	Secondary Reviewer: Valerie Gouon-Evans Additional Reviewer: Jim Keeney

Applicable NIH Guidelines: Section III-D-1-a; III-D-2-a, III-D-1-c.

Meeting Comments: This protocol perform high throughput small molecules compound screening for their ability to inhibit growth of high containment viruses including RG4 viruses. Small molecule treatments are mixed with virus and cells and then virus infection is allowed to continue. If a small molecule blocks infection it could be a candidate for therapy development and is evaluated in disease models. This protocol has been review multiple times by the IBC and an amendment to this protocol pertaining to the addition of recombinant viruses was recently approved. PPE used for the work is appropriate and waste disposal procedures are clearly stated and all are appropriate. The only changes made in the current submission were to add a new graduate student and to update biosafety cabinet certification dates.

BUA Site Assessment: All safety training and medical clearances are current for all members. Biosafety cabinets are all duly certified and EHS maintains all those records.

PI recused himself during discussion on approval decision.

Motion: Approve	For: 12	Recuse: 1	Against: 0	Abstain: 0	Absent: 0

4. rDNA/Bhz –Three-Year Renewal

BUA	(PI)	Title	BSL	ABSL	Campus
2345	Robert Davey	Identification of host factors controlling virus infection	4	N/A	BUMC

Primary Reviewer: Elke Muhlberger	Secondary Reviewer: Robin Ingalls

Applicable NIH Guidelines: Sections III-D-1-a, III-D-2-a. III-D-3, III-E-1, III-F-8, Appendix C-I

Meeting Comments: The goal of this project is to identify and study cellular defense proteins and factors that support infection. These are done by making cells produce them in different amounts and seeing how each affects infection by different viruses with a goal to identify cell defense proteins which may aid therapeutic development. This has been a frequently reviewed BSL4 protocol PPE used and waste disposal, inactivation and other procedures of concern have always been reviewed thoroughly and found to be appropriate. Changes in current renewal include the addition of arenaviruses (Junin, Machupo, and Lujo) which does not require any changes in the existing biosafety procedures. Changes might also include the addition of a rescue system to generate recombinant arenaviruses. However, some clarity is required for this particular addition. The following will be communicated to the PI:

- The PI may wish to update the filovirus taxonomy in the research description (E.g., Ebola virus instead of Zaire ebolavirus; Sudan virus instead of Sudan ebolavirus).
- The PI should clarify if recombinant arenaviruses (Junin and Machupo) will be generated. The necessary plasmids are listed in the rDNA section. If this is the case, the procedure should be added to the research description.
- Recombinant viruses should also be added to the Hazardous Biological Agents as a source of viruses.
- Please check box 2b in rDNA section to indicate if recombinant viruses will be generated.
- Please remove animal work description from Hazardous Biological Agents table for Junin and Machupo virus. This is not an ABSL4 protocol.

BUA Site Assessment: All safety training and medical clearances are current for all members. Biosafety cabinets are all duly certified and EHS maintains all those records.

PI recused himself during discussion on approval decision.

Motion: Conditional Approval (Admin Review)	For: 12	Recuse: 1	Against: 0	Abstain: 0	Absent: 0

IV. 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.