

INSTITUTIONAL BIOSAFETY COMMITTEE MEETING

January 9, 2023

Zoom Meeting

MEMBERS PRESENT: *Chair:* Elizabeth Fozo, *Vice Chair:* Deidra Mountain, Feng Chen, Lori Cole, Paul Dalhaimer, Lezlee Dice, Doris D'Souza, George Dizikes, Reza Hajimorad, Joseph Jackson, Jun Lin, Jessica Vélez, Ling Zhao

Ex-Officio: Bryan Cranmore, Carolina Dolislager, Linda Hamilton, Sandra Prior, Brian Ranger, Daniel Thomas, Jessica Woofter

MEMBERS ABSENT: Marc Caldwell, Brittany Isabell, Jae Park,

OTHERS PRESENT:

Opening:

The IBC Chair called the meeting to order at 10:02 AM. The minutes for November 16, 2022, IBC Meeting were reviewed and approved pending administrative corrections.

Full Member Review IBC Registrations:

#IBC-21-567-2 (Amit Joshi) Human Derived Materials & rDNA, III-D, Amendment

Dr. Joshi's research covers the study of two organelles, peroxisomes, and lipid droplets, mainly in lipid degradation and storage. They are interested in understanding how they are formed and function in eukaryotic cells. The study mainly involves utilizing high-resolution live-cell microscopy, transient expression by plasmid transfection, and using CRISPR to knock-in and knock-out a gene in mammalian cells. The committee approved the registration pending Designated Member Review for the addition of all personnel working in the lab, clarification of why the shotgun method to knock out genes is being used instead of a targeted approach, the removal of "Not applicable" from Question 5.1; clarification if the PI will have multiple lentiviral propagations going simultaneously; clarification of how many of the genes listed are potentially oncogenes and rationale for why the shotgun method is the only way to address potential issues; and clarification if incubators and biosafety cabinets used to generate lentivirus is dedicated to the lab.

#IBC-22-585-2 (Paul Dalhaimer) rDNA & Nanoparticles, III-D-1; D-2; D-4, New registration

Dr. Dalhaimer was present to discuss their registration covering the study of using lipid nanoparticles (LNPs) to deliver RNA to mammalian cells. Specifically, the lab is interested in creating LNPs that a) carry the mRNA for the mCherry fluorescent protein and/or carry a near infrared dye (non-RNA technology) to determine where the LNP localizes in mice, b) carry RNAs (messenger and micro) that improve the robustness of macrophages that have lost their ability to perform their basic tasks because of aging, and c) make a hepatocyte (liver) cell line that is representative of fish odor syndrome (FOS) for further study and treatment of this disease, (d) replace the promoters of MafB and cMaf in bone marrow-derived macrophages with weaker versions from alveolar macrophages (AMs). Part (c) will involve CRISPR-Cas9 reagents. The lab will use CRISPR-Cas9 reagents designed directly at Invitrogen (or equivalent) to make the mutants. The reagents will be integrated into the HepG2 cells by electroporation. Making these mutants in two separate HepG2 cell lines will provide the study with a model cell line of FOS, a

rare disease that affects humans and often leads to suicide. The lab will then "fix" the point mutants that we made with LNPs carrying CRISPR-Cas9 reagents as a proof of concept of being able to potentially fix FOS in a mouse model of FOS, which is our ultimate goal for (c). The committee approved the registration pending administrative corrections of the nontechnical summary to include a shortened summary and correction of typographical errors; the addition of HepG2 cell lines to the Human Derived Materials Section; rephrasing "No DNA or RNA will be introduced into animals" to read "No DNA will be introduced into animals"; the removal of the word "cull" before mice referenced in the Technical Summary; an update of the biosafety cabinet certification date; an update of the biohazardous spill response to include the specific disinfectant and contact time; and the completion of the Biohazardous Waste section.

Old Business:

Administrative Report

i. Contingencies

Following up on November 16, 2022, IBC Meeting, Dr. Franc Barrera Olivares' registration (#13-409-2) was corrected to include the correction of minor typographical errors, the clarification of HIV capsid in the nontechnical summary, the addition of safety glass disinfection procedures, and the removal of the autoclave from 11.2. Dr. Oudessa Kerro Dego's registration (#19-537-2) was corrected and approved through DMR to include the checking of "Working with genetic materials from pathogenic microorganisms" in Question 6.3; the addition of the source for Question 7.1; the addition of Brehm 430 and removal of 436 from Question 9.1; and the addition of the location of PPE laundering and sanitizing for Question 9.5. Dr. Andrew Monteith's registration (#22-584-2) was corrected and approved through DMR to include the removal of *Escherichia coli DH5a* from the infectious agent table; the correction of a minor typographical error; the addition of a justification statement for needle recapping and what happens to the mice after infection; the correction of the bleach shelf life from six months to one week; and the removal of the autoclave from the solid/non-sharp waste section.

ii. Administrative Approvals

The Biosafety Officer approved Dr. Joseph Jackson's amendment to registration (#21-573-2) for adding an IACUC protocol number (2936-1022) and the UTMCK RB6 Animal Facility location and an update to the autoclave validation date. The Biosafety Officer approved Dr. Jae Park's amendment to registration (#07-315-1) to include Mossman 361 and 361A lab locations.

iii. Administrative Terminations

None.

iv. Administrative Exemptions:

None.

v. Accidents, Injuries/Exposures:

Brian notified the committee

vi. Laboratory Report:

None.

vii. iMedRIS Update, Manual Reviews, & System Orientation:

None.

IBC Registration Form (Sections 1-6)

The committee discussed the revisions requested for the IBC registration form for sections 1 through 5. Changes include removing language specific to UTHSC, removing unnecessary fields such as “Working Title”; simplifying the key personnel section to ask for a study contact and list of research staff; the role should either be more descriptive or an open text field to provide a description, Department Administrators should automatically be added to the registration, and changing the Technical Summary to a Project Narrative section limited to 300 characters. Section 6 was tabled for the next meeting for a further in-depth review.

EHS Moving to Middlebrook Pike Bldg.

Brian notified the committee that EHS had completed its move and established its presence in Middlebrook Pike Bldg. The department also has a space on campus to use for regular on-campus audits and service requests. EHS is currently working on logistics and schedules for regularly accessing campus.

New Business:

IBC Draft Charter and Bylaws

The IBC Chair notified the committee that there were concerns and some changes in the works regarding the management and organizational structure of the IBC. Dr. Crawford, Vice Chancellor for Research, Innovation & Economic Development, has requested that the IBC and the Radiation Safety Committee be removed from the purview of Research Integrity. Sandra Prior helped rewrite the IBC Charter Bylaws regarding Stakeholder Roles & Responsibilities. According to NIH and UT system policy, having the Biological Safety Officer as the Designated Official is acceptable. This issue will be tabled for the next meeting, pending Dr. Pruett’s attendance to further discuss the issue.

2023 Meeting Schedule

Jessica notified the committee that the IBC meeting poll for 2023 has been created and will be shared with the committee members to determine a regular meeting time for the year.

The meeting adjourned at 11:57 AM. The next meeting scheduled is for February 1, 2023, via Zoom.