IBC Meeting Minutes
October 16, 2025 (Thursday) at 11:00 A.M.
via Zoom Conference Bridge

IBC members present:

Tom Greenough (Chair)	X	Shaoguang Li		Carol Schrader	X	Edward Jaskolski (alt)	X
Lisa Cavacini		Philip Tai	X	Mohan Somasundaran		Timothy Kowalik (alt)	
Colleen Driskill		Robert Klugman	X	Richard Ellison III (alt)		Regino Mercado-Lubo (alt)	
Kris Giaya	X	Amelia Houghton	X	Sharone Green (alt)		Casey Moran (alt)	X
Hardy Kornfeld		Eric Rouse	X	Jennifer Wang (alt)			

Non-members present: Patrice Rando (IACUC/IBC Office),

I. Introductory Remarks

1) The Chair brought to the attention of the Committee the upcoming annual research retreat October 28-29th
2) The Chair brought to the attention of the Committee the meeting minutes from the previous IBC meeting. **Meeting Decision: Vote to approve September 18, 2025 Meeting Minutes**

II. Report on incidents/accidents from Employee Health Services (EHS)

Past incidents that remain open:

1) 05/21/2025: BSL-3 PAPR incident. One person (who later traveled to Africa) had conversion of IGRA test
2) 07/08/2025: Needlestick in BSL-3. Potential TB exposure
3) 09/15/2025: Needlestick; potential exposure to human blood. Source tested neg for BBP. CLOSED

III. Protocols Reviewed Administratively

N/A

IV. Protocols to Discuss

1) Investigator: Behar, S
Title: Immunity to Tuberculosis
IBC Registration: 529-23, Amendment
Training Verification: Acceptable
Brief Summary: Amendment to add three strains of Mycobacterium tuberculosis (Mtb) to the protocol

Brief Summary and Review by Primary Reviewer

Overview and Objectives: This amendment covers the addition of three strains of M. tuberculosis. mc27000 (H37Rv ΔRD1ΔpanCD) is an auxotroph of Mtb that requires supplementation with pantothenic acid (vitamin B5) to grow. In mc(2)7000, the deletion of RD1 (encoding a secretion system that exports the proteins ESAT-6 and CFP-10, crucial virulence) and two genes required for the synthesis of pantothenic acid (panCD) ensures that the strain is attenuated and unable to revert to the virulent wild type status. This bacterium was shown to be highly attenuated in immunocompromised SCID mice and in immunocompetent BALB/c mice and other susceptible animal models. Currently,

Christopher Sassetti obtained the UMASS IBC approval for working with this strain in BSL2 laboratory and has an active research program with the auxotrophic strains of Mtb including the unmarked double mutant mc(2)7000. This strain will be used as a vaccine to induce immunity in the mouse model of Mtb.TrxB2-DUC and BPL-DUC: These are two Mtb strains that have been genetically engineered using a dual control switch (DUC) to deplete these two essential proteins by transcriptional silencing and inducible proteolytic degradation, in the presence of anhydrotetracycline (in vitro) or doxychow feed for mice (in vivo).

•These strains have been used to induce a state resembling latency in the mouse Mtb model (10.1084/jem.20210332).

•We will use these strains to determine the components of the immune system that are involved in maintaining latency using the murine TB model.

Experimental Approach: mc27000 will be grown in vitro in small volumes (<100 ml) in media complemented with pantothenic acid. Then, quantified, aliquoted, and frozen at -80C. The bacterial cultures will be handled inside a Biosfaety cabinet and any bacterial and plastic waste which is in contact with the bacterial culture will be decontaminated with Vesphene, similar to the protocol we use for decontaminating virulent Mtb in the BSL3 lab. UMMS IBC has approved experimentation with these strains using BSL2+ containment. The bacteria will be used to vaccinate mice by the subcutaneous route.

TrxB2-DUC and BPL-DUC strains of M. tuberculosis will be handled in the BSL3 laboratory using the same safety protocols we use for the parental/wild type M. tuberculosis strains. These are covered in the section E1. Briefly, they will be grown in vitro in small volumes (<100 ml), quantified, aliquoted, and frozen at -80C. Frozen aliquots will be regrown, quantified, and used to infect mice by the aerosol route. Tissue burden of Mtb will be determined by measuring colony forming units (CFU) in tissue homogenates on bacterial plates.

IBC Discussion and Vote

Discussion: Reviewer discussed that the protocol was well written, and the lab is already approved for M. tuberculosis work. The reviewer discussed that it is important to know where they are obtaining the mc27000 strain from. IBC to verify BSL-2 approval for mc27000 (Sassetti)

Meeting Decision: Vote to approve upon completion of action items.
BSL/ABSL: **BSL-3; ABSL-3**
NIH Guidelines: III-D

2) Investigator: Schatzmann-Peron, J
Title: Cellular and molecular mechanisms of neuropathogenesis during ZIKV and SARS-CoV-2 infection in murine models and the potential of murine endometrial-derived mesenchymal (meMSCs) as a therapeutic tool

IBC Registration: **874-23, Amendment**
Training Verification: Acceptable pending completion of PI training
Brief Summary: We would like to include the recombinant ZIKV isolate Dakar-G18R-mNG (mNeonGreen) to our protocols. This recombinant virus has a NeonGreen cassette which is a powerful tool for the tracking of viral particles in cells and tissues either in vitro and in vivo. There is no change in the overall biosafety level (BSL-2). The mNeonGreen cassette was cloned into the Dakar isolate that was adapted in mice as described here - https://pmc.ncbi.nlm.nih.gov/articles/PMC5953559/

ZIKV isolate Dakar-G18R-mNG (mNeonGreen). This isolate was gentle gift from Dr. Xuping Xie from UTMB.

Brief Summary and Review by Primary Reviewer

Overview and Objectives: To investigate the cellular and molecular mechanisms involved in the neuropathogenesis of SARS-CoV-2 and Zika virus (ZIKV) infection using murine models. To evaluate the therapeutic potential of murine endometrial-derived mesenchymal stem cells (uMSCs) to reduce neuropathology. To investigate how individual ZIKV non-structural proteins modulate host immune response.

AMENDMENT to quantify and localize ZIKV particles within cell compartments in vitro and fate map ZIKV tissue distribution in experimental animals in vivo.

Experimental Approach: AMENDMENT to add: Recombinant ZIKV isolate Dakar-G18R-mNG (mNeonGreen). This recombinant virus has a NeonGreen cassette allowing tracking of viral particles in cells and tissues either in vitro and in vivo. The mNeonGreen cassette was cloned into the Dakar isolate that was adapted in mice as described here - https://pmc.ncbi.nlm.nih.gov/articles/PMC5953559/ZIKV isolate Dakar-G18R-mNG (mNeonGreen). From Dr. Xuping Xie at UTMB.

Experimental Approaches:

1 – Human and murine neutrophils and monocytes will be infected in vitro (MOI=0.1-1) and replication will be evaluated daily. The presence of viral particles in different cell compartments will be investigated after co-immunostaining,

2 – Pregnant mice (IACUC 202300000063) will be infected in vivo at E13-15. At E20 and P0 animals will be euthanized and brain submitted to fluorescence microscopy for the tracing of viral particles after co-immunostaining of brain cells, as microglia, astrocytes and neurons.

Outline of previous review:

Viral stocks and propagation. ZIKV manipulation is performed under BSL-2 while SARS-CoV-2 manipulation is performed under BSL-3. In vitro infection with ZIKV and SARS-CoV-2: Target cells are infected at specified MOI. At the end of incubation, cells are fixed with 4% formaldehyde and stained with 1% Crystal Violet for plaque visualization. Viral loads and gene expression (qPCR): Cells or tissues are lysed with 1 mL of Trizol reagent for 5 min at room temperature in sealed tubes using precellys bead homogenizers to avoid spilling and aerosol formation. In vivo infection with ZIKV: SJL, C57BL/6, IFNAR KO or hSTAT-2 mice with 6-8 wks of age are used. For fetal analysis, pregnant mice are infected at E12-E14. Injected IP or in the foot pad. In vivo infection with SARS-CoV-2: Golden Syrian hamsters 12-15 wks of age are used. Viral inoculum is slowly dropped onto the nose. Tissues (brains) are collected aseptically at necropsy, placed in 50 ml falcon tubes with DMEM. EAE model: Female C57BL/6 WT animals are subcutaneously immunized with Myelin oligodendrocyte glycoprotein (MOG 35-55) peptide emulsified in Complete Freund's Adjuvant in each side of the inguinal region. Additionally, at 0 and 48 hours after immunization, 0.2 µg of Bordetella pertussis toxin in 200 µL of PBS is administered intraperitoneally. In vivo treatment with Extracellular Vesicles (EVs) of uMSCs or meMSCs. IP injected per mouse. Extracellular vesicles are also extracted from Naïve or EAE mice brain and spinal cord. Lymph nodes and spleen are dissociated using a cell strainer and the plunger of a syringe. Placentas collected at different gestational timepoints are chopped and filtered. Brain tissue is minced with scissors then treated with collagenase D. Some experiments involve culture of primary astrocytes. Meningeal cells are used in some experiments. Cell sorting of astrocytes: Cell sorting of infected cells is planned. Downstream assays all include a treatment that will inactivate virus: i) qPCR; ii) confocal immunofluorescence; iii) RNAseq; iv) Single cell/single nucleus RNAseq. Cells from brain, lymph nodes, spleen and placenta are sorted with downstream assays similar to those described for astrocytes. Work involving Lentivirus vectors: Astrocytes will be transduced non-structural proteins of ZIKV. Work involving shRNA: Astrocytes treated with shRNA Smartpool (siRela) mixed with Fugene. Later infected with ZIKV.

IBC Discussion and Vote

Discussion: Reviewer discussed that this initially seems straightforward however the mouse adapted strain Dakar-G18R-mNG might carry a risk of increased virulence. The reviewer also questioned whether there is any experience for using the mouse adapted strain in NHP's. These concerns were allayed with review of literature and lack of any human infection with this particular mutation providing evidence of a fitness cost in natural infections of humans.

Meeting Decision: Vote to approve upon completion of action items.

BSL/ABSL: **BSL-2; ABSL-2**

NIH Guidelines: III-D

3) Investigator: Woda, B
Title: Morphology Core
IBC Registration: **926-25, New**
Training Verification: Acceptable pending completion of PI training
Brief Summary: Morphology Core provides services to Umass principal investigators. Frozen sections, histopathology, paraffin embedding, etc.

IBC Discussion and Vote

Discussion: The reviewer discussed that the protocol needs some work. There are sections of the registration that still need to be filled out that were left blank. The reviewer discussed action items.

Meeting Decision: Vote to approve upon completion of action items.

BSL/ABSL: **BSL-2**

NIH Guidelines: III-D, III-E, III-F

V. Report on incidents/accidents/issues involving BSL-3 & ABSL-3 Facilities

CDC site visit September 23 and 24

1) Observations: BSL-2 signage for doffing PPE; Inventory tag/record discrepancy; SEB inventory needs to be more detailed/granular; ABSL-3 scrubs (not street clothes) under PPE – scrubs need to be laundered/decontaminated
2) Other small items – RO to sign inactivation protocols for SAT; ABSL-3 bag-in/bag-out filter testing
3) Year-end training; drills and exercises; Manual updates

VI. Information from the field (Senior Biosafety Officer)

1) PPE assessment for Animal Medicine
2) Shrewsbury sNA permitting underway – application submitted; more information requested
3) New BSL-3 space design meeting – Oct 27

VII. Other Business

1) AALAAC prep – PPE clarification for Coxiella SOP
2) Updated MTB medical SOP to be posted on IBC website

Acknowledgement Items:

1) Simin 443-24 (CRC)- New Pfizer trial Pfizer C4601003 PI Wessolossky "**A PHASE 3, PLACEBO-CONTROLLED, DOUBLE-BLINDED, RANDOMIZED STUDY TO EVALUATE THE SAFETY, TOLERABILITY, AND IMMUNOGENICITY OF DIFFERENT VACCINATION SCHEDULES OF 6-VALENT OSPA-BASED LYME DISEASE VACCINE, VLA15, IN HEALTHY ADULT PARTICIPANTS" New clinical trial with samples processed in CRC and Simin lab**

2) Caricchio 888-24 **"A Phase 1 Study of NKX019, a CD19 Chimeric Antigen Receptor Natural Killer (CAR NK) Cell Therapy, in Subjects with Autoimmune Disease"** Update Nkarta NKX019-102-Protocol Am.5 & ICF v6. Aligns DSMB criteria for advancing dose with parallel protocol and allows backfill of lower doses.

3) Caricchio 889-24 **"A PHASE 1 STUDY OF CC-97540 IN SEVERE, REFRACTORY AUTOIMMUNE DISEASES: SYSTEMIC LUPUS ERYTHEMATOSUS (SLE), IDIOPATHIC INFLAMMATORY MYOPATHY (IIM) OR SYSTEMIC SCLEROSIS (SSc)"** Update BMS-CA061-1001- Protocol Am.10 & ICF v9. Version 10 includes amendment 9; updating the number of participants in Part B of the systemic lupus erythematosus cohort and provide protocol clarifications

Adjourned at 12:15pm