Institutional Biosafety Committee

Biological Full Committee

Minutes

Tuesday, July 15, 2025

Present:	Henrique Borges da Silva, Richard Chichester, Marion Curtis, Madiha Fida, Marina Hanson, John Jasker, Richard Kennedy, Daniel Montonye, Suzannah Schmidt-Malan, Russel Sinor, Melanie Swift
Absent:	John Copland, Hind Fadel, Kathleen McNaughton, Elitza Theel
Mayo Guests:	Anwesha Mukherji
Guests:	Brendan Shea
Duration:	11:30 AM - 1:30 PM

Quorum was present during all committee decisions.

Discussion Items

- 1. Approve June Meeting Minutes

  Meeting minutes approved.
- 2. Approve Consent Agenda (Note Items)

  Consent agenda (note items) approved.

Note Items

Approvals

- **Purna Kashyap Update of Host-microbial interactions in gastrointestinal motility and physiology**
  Review Type: Update Application
- **Michael Ackerman Suppression-Replacement Gene Therapy for Cardiomyopathies**
  Review Type: Update Application
- **Purna Kashyap Update of Host-microbial interactions in gastrointestinal motility and physiology**
  Review Type: Update Application
- **Maria Irazabal Mira Update of NOX4-mitochondria crosstalk in oxidative stress-mediated endothelial dysfunction in Autosomal Dominant Polycystic Kidney Disease (ADPKD)**
  Review Type: Update Application
- **Mohsen Khosravi Maharlooei Update of Use of lentiviral vectors, CRISPR-based gene editing and humanized mice for immune-related research**
  Review Type: Update Application
- **Tamas Ordog Epigenetics of the Gastrointestinal System**
  Review Type: Update Application
- **Hu Zeng Update of Metabolic regulation of humoral immunity**
  Review Type: Update Application
- **Scott Kaufmann Update of CRISPR sgRNA screen for drug resistance in ovarian cancer**
  Review Type: Update Application
- **Peter Harris Ciliopathy Mutation Mimicking in Bacterial Vectors**
  Review Type: Update Application
- **Robin Patel Update of General protocol for in vitro Infectious Diseases Research Laboratory projects.**
  Review Type: Update Application

Protocols Reviewed

- **Michael Ackerman** Expression of dominant negative Rab11b as a treatment for heart failure

  Subject to Laboratory and Animal Biosafety Level 1 provisions and practices for research involving the study of plasmid constructed recombinant adeno-associated virus AAV9, to deliver Rab11b dominant negative form to block Rab11b in cardiomyocytes in an animal model.

  This study aligns with sections III-D-4-a of the NIH Guidelines.

  Due to the note of injection as the route of delivery, it is recommended that the laboratory take extra precautions during sharps (needle) usage when handling the animals. No recapping, sheering, bending, or breaking or removing the needle from the syringe is allowable. All sharps waste is to be placed in appropriate hard walled waste containers. If these actions must occur or are ongoing at this time, you must contact the Biosafety Office, IMMEDIATELY to discuss the proper handling of sharps. Your laboratory will be audited to handling of sharps in the manner described above unless an exemption is on record with the IBC.

  The laboratory is reminded to use the appropriate animal cage labels (BSL1) in the animal facility for all housed animals associated with this project.

  As a reminder to the lab, eye protection must be worn whenever there is the possibility of a spill or splash. All samples considered biosafety level 2/2+ and those items that may be potentially contaminated must be disinfected before removal from a biosafety cabinet for final disposal in regulated medical waste (red bins). Proper waste disposal will be audited yearly. Any questions can be directed to the Biosafety Office and/or Waste Management.

  Animal work with the approved biohazardous agents must be listed in an approved IACUC protocol prior to the onset of experimentation in the animal model. All biohazardous agents must be approved by the IBC prior to work in an animal model.

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- **Darren Baker** Use of AAV-PCSK9 system to induce dyslipidemia in Alzheimer's diseasee and atherosclerosis lineage tracing mouse strains

Subject to Laboratory and Animal Biosafety Level 1 provisions and practices for research involving the study of plasmid constructed recombinant adeno-associated virus expressing PCSK9 into the liver of Alzheimer's disease and atherosclerosis lineage tracing in an animal model.

This study aligns with sections III-D-4-a of the NIH Guidelines.

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- **F Fortuin** Endocardial Delivery of XC001 Gene Therapy for Refractory Angina Coronary Treatment: A 26-Week (with 26 Week Extension) Phase 2b Randomized, Multi-Center, Double-Blind, Sham Controlled Study to Evaluate Efficacy and Safety

  The Biological Hazard Application, Bios00001994, for "Endocardial Delivery of XC001 Gene Therapy for Refractory Angina Coronary Treatment: A 26-Week (with 26 Week Extension) Phase 2b Randomized, Multi-Center, Double-Blind, Sham Controlled Study to Evaluate Efficacy and Safety" (IRB 25-003297) has been approved.

  Subject to Laboratory Biosafety Level 2 provisions and practices for research involving the study of XC001, an investigational drug made of adenovirus that has been genetically altered to be able to deliver a potentially therapeutic modified form of VEGF (vascular endothelial growth factor) to the heart to promote the growth of new blood vessels and thus increase blood flow to the heart, in a clinical trial.

  This study aligns with section III-C Experiments Involving Human Gene Transfer that Require Institutional Biosafety Committee Approval Prior to Initiation of the NIH Guidelines.

  This trial is approved for administration at the Mayo Clinic Phoenix location only. If the enrollment of patients at either Mayo Clinic Rochester or Mayo Clinic Jacksonville is desired, the laboratory is directed to inform the IBC of the expansion.

  Infection Prevention and Control has determined that standard precautions are appropriate for this trial.

  Informed Consent documentation is adequate.

- **John Giudicessi** A Phase 1b, Multicenter, Open-Label, Dose Finding Study to Investigate the Safety and Tolerability of a Single Intravenous Dose of SGT-501 in Patients with Catecholaminergic Polymorphic Ventricular Tachycardia

  The Biological Hazard Application, Bios00001992, for "A Phase 1b, Multicenter, Open-Label, Dose Finding Study to Investigate the Safety and Tolerability of a Single Intravenous Dose of SGT-501 in Patients with Catecholaminergic Polymorphic Ventricular Tachycardia" (IRB 25-002738) has been approved.

  Subject to Laboratory Biosafety Level 1 provisions and practices for research involving the study of SGT-501, an adeno-associated virus serotype 8 (AAV8) that delivers CASQ2 gene to cardiomyocytes, restoring calcium regulation and reducing the risk of arrhythmias, in a clinical trial.

This study aligns with section III-C Experiments Involving Human Gene Transfer that Require Institutional Biosafety Committee Approval Prior to Initiation of the NIH Guidelines.

This trial is approved for administration at the Mayo Clinic Rochester location only. If the enrollment of patients at either Mayo Clinic Jacksonville or Mayo Clinic Scottsdale is desired, the laboratory is directed to inform the IBC of the expansion.

Infection Prevention and Control has determined that standard precautions are appropriate for this trial.

Informed Consent documentation is adequate.

- **Shyamal Mehta** A Phase 1/2a Open-Label Ascending Dose Study to Evaluate the Safety and Effects of LY3884961 in Patients with Parkinson's Disease with at Least One GBA1 Mutation (PROPEL)

  The Biological Hazard Application, Bios00001993, for "A Phase 1/2a Open-Label Ascending Dose Study to Evaluate the Safety and Effects of LY3884961 in Patients with Parkinson's Disease with at Least One GBA1 Mutation (PROPEL)" (IRB 25-002757) has been approved.

  Subject to Laboratory Biosafety Level 1 provisions and practices for research involving the study of LY3884961, a non-replicating AAV used to package and deliver GBA1, in a clinical trial.

  This study aligns with section III-C Experiments Involving Human Gene Transfer that Require Institutional Biosafety Committee Approval Prior to Initiation of the NIH Guidelines.

  This trial is approved for administration at the Mayo Clinic Phoenix and Rochester locations only. If the enrollment of patients at Mayo Clinic Jacksonville is desired, the laboratory is directed to inform the IBC of the expansion.

  Infection Prevention and Control has determined that standard precautions are appropriate for this trial.

  Informed Consent documentation is adequate.

- **Isobel Scarisbrick** Use of AAV to Study PAR1 Signaling

  Subject to Laboratory and Animal Biosafety Level 1 provisions and practices for research involving the study of plasmid constructed recombinant adeno-associated virus expressing F2R in an animal model.

  This study aligns with sections III-D-4-a of the NIH Guidelines.

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  The laboratory is reminded to use the appropriate animal cage labels (BSL1) in the animal facility for all housed animals associated with this project.

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- **Hu Zeng** Vaccination of rodents with SARC-CoV2 mRNA vaccine

  Subject to Laboratory and Animal Biosafety Level 1 provisions and practices for research involving the study of how a cancer immunotherapy medicine (anti-PD-1 biologic) affects immune response to COVID-19 mRNA vaccine in an animal model.

This study aligns with sections III-D-4-a of the NIH Guidelines.

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- **Michael Barry** Update of Adenovirus Vector Hybrids

  Modification to this application submitted to include a new generation of adenoviral vectors (non-species C Helper-Dependent-Adenovirus system, and to make an "all in two" with the gag/pol in one Ad and the LTR-CAR-LTR in another Ad. Similarly AAV-REP in one and AAV-CAP in another.

  In this study the lab is generating AAV vectors more efficiently from spinner cultures and spreading gene therapy from a site of oncolytic adenovirus infection.

  Subject to Laboratory and Animal Biosafety Level 2 provisions and practices for research involving the study of Moloney Murine Leukemia Viral Vector (MMLV) expressing MLV gag, pol or env in an animal model.

  Subject to Laboratory and Animal Biosafety Level 2 provisions and practices for research involving the study of adenovirus expressing AAV rep and/or AAV cap without AAV ITRs in an animal model.

  Subject to Laboratory and Animal Biosafety Level 1 provisions and practices for research involving the study of plasmid constructed recombinant adeno-associated virus expressing CMV-GFP-Luc, or CMV-Cre, or rep-cap.

  Animals or cells used with combinations of biological hazards take on the biocontainment controls associated with the highest biocontainment level required.

  This study aligns with sections III-D-4-a of the NIH Guidelines.

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  The laboratory is reminded to use the appropriate animal cage labels (BSL2) in the animal biosafety suite for all housed animals associated with this project. Housing at this level is required for the duration of the animal subject’s life span post exposure to the biohazardous agent.

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prevent an exposure.

- **Michael Barry** Update of Gene Therapy

  Modification to this application submitted to include testing of Polyethylene terephthalate (PET) degrading enzymes as proteins, genes or mRNA therapeutics; and to include a new generation of adenoviral vectors (non-species C Helper-Dependent-Adenovirus system).

  Subject to Laboratory and Animal Biosafety Level 2+ provisions and practices for research involving the study of replication deficient, HIV-1 based lentiviral vector expressing Crispr, guide RNA, and luciferase in an animal model.

  Subject to Laboratory and Animal Biosafety Level 2 provisions and practices for research involving the study of various adenovirus vectors expressing various genes of interest as outlined in the application in an animal model.

  Subject to Laboratory and Animal Biosafety Level 2 provisions and practices for research involving the study of Human cytomegalovirus (HCMV), and Foamy virus expressing Cre, GFP, or Luciferase in an animal model.

  Subject to Laboratory and Animal Biosafety Level 1 provisions and practices for research involving the study of plasmid constructed recombinant adeno-associated virus expressing various genes of interest as outlined in the application in an animal model.

  Genes of interest include: Cas9, COL4A, cre, dysferlin, E3, GFP, BFP, RFP, guide RNA (gRNA), klotho, Luciferase, MHETase, PCC, PD-L1, PETase, PKD1, PKD2, Rad23, and Talen.

  Combinations of biological hazards take on the biocontainment controls associated with the highest biocontainment level required.

  This study aligns with sections III-D-4-a of the NIH Guidelines.

  The laboratory is reminded to use the appropriate animal cage labels (BSL1 AAV, BSL2 AV HCMV, BSl2+ LV) in the animal facilities for all housed animals associated with this project.

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- **Michael Barry** Update of Characterization of filovirus protein functions and host-viral protein interactions

  Modification submitted to include the use of minigenome and trVLP systems to deliver or express si/shRNAs with antiviral activity. Only one transgene will be expressed at one time.

  The committee discussed and agreed that there are no DURC concerns.

  Subject to Laboratory and Animal Biosafety Level 2 provisions and practices for research involving the in vitro study of the filovirus minigenome plasmid is transfected into eukaryotic cells together with expression plasmids (called helper plasmids) for L, VP35, NP and VP30, trVLPs, and if necessary T7 RNA polymerase, leading to expression of the minigenome and formation of minigenome-containing RNP complexes expressing multiple genes of interest (none classified at known or suspected oncogenes or tumor suppressors). Genes of interest include: 2A, AmCyan1, APC, AU1, Azami-Green, Bat filovirus VP35 homolog, Beta-lactamase, Borrelia outer

membrane/surface lipoproteins: BamA, OspA, OspB, and VIsE, bsr, C/prM//E1/E2 [derived from Hepatitis C virus], Cas9, CAT, CD40LG, CLuc, Coronavirus ORFs/proteins, Cre, DsRed/DsRed2/DsRed-express, eBFP, eCFP, Ehrlichia muris/chaffeensis outer membrane proteins P28 and P29, eIF4E, ERAV 2A, F [derived from viruses belonging to the family Pramyxoviridae], F/G [derived from viruses belonging to the Pneumoviridae], FLAG, FLuc, G [derived from viruses belonging to the Rhabdoviridae family], G [derived viruses belonging to the Bornaviridae family], G/H/HN [derived from viruses belonging to the family Paramyxoviridae], gB/gD/gH/gL [derived from Herpes simplex virus 1 and 2], GFP/eGFP, gH/gL/pUL128/pUL130/pUL131A [derived from human and murine cytomegarovirus], GLuc, GM-CSF, GP (viruses belonging to Filoviridae family), GP [derived from viruses belonging to the genus Thogotovirus], GP [derived from viruses belonging to the order Bunyavirales], gp160 [HIV-1, gp64 [baculovirus], GPC (viruses belonging to Arenaviridae family), gRNA, GST, HA and NA [derived from viruses belonging to the genra Influenzavirus A and B of the Orthomyxoviridae family], Halotag, HA-tag, Hepatitis delta virus and Hammerhead ribozyme sequences, His-tag, hNIS, hph, HSP70, HSP90B1, IFN-alpha, -beta, -gamma, -epsilon, -lambda, IL-12, IL-15, IL-18, IRES, L (viruses belonging to Filoviridae family): Not expressed from minigenome, LacZ, LLuc, M [derived from viruses belonging to the Orthomyxoviridae family], M [derived from viruses belonging to the Paramyxoviridae family], M [derived from viruses belonging to the Pneumoviridae], M [derived viruses belonging to the Rhabdoviridae family], mApple, mCherry, microRNA target sequence, mNeonGreen, mOrange1/2, mTFP1, mWasabi, Myc-tag, N (viruses belonging to Arenaviridae family), N (viruses belonging to Bunyaviridae family), NanoLuc, NAPc2, Non-structural protein 1 (NS1) [derived from viruses belonging to the genus Flavivirus], NP (viruses belonging to Filoviridae family), NS1 (viruses belonging to Orthomyxoviridae family), NSs (Bunyavirales), P isoforms (viruses belonging to Paramyxoviridae family), PABP, pac, PreS1/PreS2/S [derived from Hepatitis B virus], Putative nonstructural genes: Gns, α1, α2, β, γ, U1, U2, U3, U1x, U1y, U1z, C, and C' [viruses belonging to the Rhabdoviridae family], RBBP6, RLuc, SEAP, SeV DI-RNA, sGP (viruses belonging to Filoviridae family), Sh ble, Short-hairpin RNAs targeting host genes listed in this application, Small interfering RNAs targeting viral genes listed in this application, SP6pol, S-tag, Strep-tag, Structural ORFs [derived from viruses belonging to the genus Alphavirus], Structural polyprotein: C-prM-E [derived from viruses belonging to the genus Flavivirus], Superfolder GFP, Syncytin-1 (ERVW-1), Syncytin-2 (ERVFRD-1), T7pol, tagRFP, TaV2A, TCA-TFR/MetLuc, tdTomato, Tetracystein-tag, Thrombomodulin, UnaG, V5-tag, Venus, VP24 (viruses belonging to Filoviridae family), VP30 (viruses belonging to Filoviridae family), VP35 (viruses belonging to Filoviridae family), VP40 (viruses belonging to Filoviridae family), VSV M, VSV-tag, YFP, Z [derived from viruses belonging to the Arenaviridae family], and ZsGreen.

This study aligns with sections III-D-4-a of the NIH Guidelines.

The use of trVLPs is for modeling and characterizing EBOV pathogenesis and life cycle in an animal model. The laboratory has provided sufficient documentation regarding the containment of animals injected with trVLPS.

As a reminder, should the list of genes change, the laboratory is reminded to modify their Biosafety Application to reflect those changes.

For the filovirus minigenome, the percentage of the total genome is less than 2/3 of the viral genome in the plasmid. The missing genes involve 4 open reading frames and a portion of the promoter region. As a result, there is no way to get a replication competent virus during the project.

The committee noted that none of the proposed viruses are transmitted via the airborne route, they must be carried by an insect vector (e.g. mosquito or tick).

There is no insectary in close proximity to the BSL2 or BSL3 facilities as well as no field study animal in close to the 2 tissue culture rooms where work will be conducted.

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OK Cancel