Institutional Biosafety Committee Minutes

Date: Wednesday, December 17, 2025

Time: 9:30 AM

Location: Zoom Meeting

MEMBERS IN ATTENDANCE	MEMBERS ABSENT	STAFF
Busch, Robert H	Brown, Anthony	Gonzalez Russi, Sabrina
Carroll, Ann M.	Geri, Jacob	
Finkernagel, Scott W.	McGuinn, Catherine	
Kaminsky, Stephen M.	Ndhlovu, Lishomwa (Lish)	
Lieggi, Christine		
Otero, Miguel		
Repik, Gabrielle		
Schnappinger, Dirk		
Wagner, John A.		

Meeting Minutes for Approval

- November 19, 2025

No issues were raised and the committee approved the minutes from November 19, 2025.

Safety Officer Report

New Business

- Updated minutes- review process explanation

Conflicts of Interest Disclosure:

No member of the IBC may participate in the review of any project in which the IBC member is an investigator, has a financial conflict of interest, or has any other interest which has an adverse impact on the IBC member's ability to exercise independent judgment. Under such circumstances, the IBC member shall not be present during IBC deliberations, except to provide information requested by the IBC. Each member of the IBC shall respect and preserve the confidentiality of information he/she receives as a member of the IBC, and shall use, discuss, and/or disclose such information only for purposes related to deliberations or other assigned business of the IBC.

- *Dr. Schnappinger reported a Conflict of Interest with Dr. Nathan, Dr. Rhee, Dr. Ehrt and Dr. Fitzgerald. Dr. Schnappinger abstained from voting on these registrations.*

Protocols on Agenda

The Institutional Biosafety Committee (IBC) and Biosafety staff perform pre-reviews on all protocol submissions, including consideration of: agent characteristics (e.g., virulence, pathogenicity, environmental stability, replication competence), the types of manipulations planned, the sources of nucleic sequences (species), the nature of the nucleic acid sequences (e.g., structural, enzyme, oncogene, toxin, gene regulator), the hosts and vectors to be used, whether an attempt will be made to obtain expression of a transgene, and if so, the function of the protein in the proposed system.

IBC review includes: (i) independent assessment and setting of the containment levels required by the NIH Guidelines for the proposed research; (ii) assessment of the facilities, procedures, practices, and training and expertise of personnel involved in recombinant or synthetic nucleic acid molecule research; (iii) for recombinant or synthetic nucleic acid molecule research involving human research participants assessment focused on biosafety issues (e.g., administration, shedding) (iv) set containment levels in concert with the WCM IACUC.

Prior to reviewing a registration at the IBC meeting, the Principal Investigators laboratory is inspected to confirm that facilities and biocontainment equipment (e.g., certified Class II biological safety cabinets) are available and appropriate. We also determine if all laboratory personnel are appropriately trained to adhere to institutional and federal regulations to ensure the safe and compliant conduct of research.

All protocol submissions are made available to IBC members before the meeting. During the meeting, reviewers' and members' questions are presented, discussed, and sufficiently addressed. Protocols are voted on and acted upon by the IBC, i.e., applications are either approved, rejected or returned to the applicant to request clarifying information. Protocols deemed to require changes are returned to the PI for revision before subsequent review by the IBC. Principal Investigators are then provided the results of the IBC review and official approval.

Following initial approval, IBC registration remains valid for a period of two years. During this two-year period, laboratory inspections and review of training records of lab staff are conducted annually in accordance with Weill Cornell policies.

Laboratory Safety Registrations - Initials

Record Number: 25-0069
PI Name: Nir Ben Chetrit
Submission Type: Initial
Notes: The assigned IBC member reviewed the procedures performed in the lab. No issues were raised. The reviewer recommended approval of Lentivirus at ABSL-2/BSL-2.
Decision: Approved

Recombinant Microorganism Tracking Table:

Recombinant Microorganism Tracking Table:

Microorganism for Recombinant work	Other microorganism name	List strains/serotypes for constructs	Ability to replicate in the cell	Cell/cell type where microorganism/vector will be propagated/packaged	In vivo or in vitro?	Cell type where expressed	Gene/gene family to be inserted, deleted, upregulated or downregulated	Original source(s) species of DNA/RNA	Biological activity/potential of gene modification	Manipulation types performed/planned	Assigned Biosafety Level(s)	Regulatory Rationale	Applicable NIH Guidelines
Lentivirus [Retroviridae/Lentiviridae]		Pax2, VSVG (Add gene)	Replication Incompetent/ Deficient	Breast cancer cell lines, 293FT	Both	In vivo ~ Bacterial ~ Human	CRISPR, RFP, luciferase, UBA 1, UBA 5	Jellyfish ~ Murine	Antibiotic Resistance ~ Cytokine ~ Gene Expression Regulators ~ Marker/Reporter	Transfect cell line ~ Transfect cells ~ Transfect cells / introduce into in vivo model	ABSL-2 ~ BSL-2	NIH Applicable	Section II I-D-1 ~ Section III-D-3 ~ Section III-D-4

Record Number: 25-0114
PI Name: Yinghua Ma
Submission Type: Initial
Notes: The assigned IBC member reviewed the procedures performed in the lab. The reviewer noted that this PI is taking over Dr. Vartanian's lab. No issues were raised. The reviewer recommended approval of Lentivirus at ABSL-2/BSL-2.
Decision: Approved

Recombinant Microorganism Tracking Table:

Recombinant Microorganism Tracking Table:

Microorganism for Recombinant work	Other microorganism name	List strains/serotypes for constructs	Ability to replicate in the cell	Cell/cell type where microorganism/vector will be propagated /packaged	In vivo or in vitro?	Cell type where expressed	Gene/gene family to be inserted, deleted, upregulated or downregulated	Original source(s) species of DNA/RNA	Biological activity/potential of gene modification	Manipulation types performed/planned	Assigned Biosafety Level(s)	Regulatory Rationale	Applicable NIH Guidelines
Adeno-Associated Virus (AAV)		AAV-BR 1-GFP	Attenuated ~ Replication Incompetent/ Deficient	293T, CHO	Both	In vivo ~ Human	GFP, MAL, BR1	Bacteria ~ Jellyfish ~ Murine	Gene Expression Regulators ~ Marker/Reporter	Direct inject into in vivo model ~ Transfect cell line ~ Transfect cells	ABSL-1 ~ BSL-2	NIH Applicable	Section II I-D-2 ~ Section III-D-4
Lentivirus [Retroviridae/Lentiviridae]		pLVX-Puro, Lenti-shRNA against MyD88, Lenti-shRNA control sequence, Lenti-MyD88	Replication Incompetent/ Deficient ~ Self-Inactivating	293T	Both	In vivo ~ Human	Myd88,Tlr2, Tlr4, Trif	Murine	Marker/Reporter ~ Other/Loss-of-function in inflammatory and blood-brain barrier opening	Create virions ~ Direct inject into in vivo model ~ Express/Upregulate gene of interest ~ Repress/Downregulate gene of interest ~ Transfect cell line ~ Transfect cells	ABSL-2 ~ BSL-2	NIH Applicable	Section II I-D-1 ~ Section III-D-2 ~ Section III-D-4
Escherichia Coli		Epsilon prototoxin plasmid pET-22 b	Attenuated ~ Replication Competent	HMS 174 (K12-background)	In Vitro	In vivo ~ Bacteria 1	etx-B (epsilon prototoxin)	Bacteria	Toxin	Express/ Upregulate gene of interest ~ Transfect cell line ~ Transfect cells	BSL-2+	NIH Applicable	Section II I-B-1 ~ Section III-D-2

Biological/Microbiological Microorganism Tracking Table:

Biological/Microbiological Microorganism Tracking Table:

Microorganism for Biological/Microbiological work	Other microorganism name	List strains/serotypes for constructs	Ability to replicate in the cell	In vivo or in vitro?	Manipulation types performed/planned	Assigned Biosafety Level(s)	Regulatory Rationale	Applicable NIH Guidelines
Clostridium perfringens		Patient derived and C. Perfringens: ATCC 3624, 12915, 3626, 27059, 363, BAA-1481, 3626	Replication Competent	Both	Culturing ~ Introduction into in vivo model	ABSL-2 ~ BSL-2	Not rDNA	

Laboratory Safety Registrations - Amendments

Record Number: 23-0020
PI Name: Taha Merghoub
Submission Type: Amendment
Notes: The assigned IBC member reviewed the lab protocols. The amendment includes the addition of replication incompetent lentiviral/Cas9 to introduce targeted mutations into the LKB1 locus in A549 cells. No issues were raised. The reviewer recommended approval at previously approved biosafety levels and the additional of line of Lentivirus at ABSL-2/BSL-2+.
Decision: Approved

Recombinant Microorganism Tracking Table:

Recombinant Microorganism Tracking Table:

Microorganism for Recombinant work	Other microorganism name	List strains/serotypes for constructs	Ability to replicate in the cell	Cell/cell type where microorganism/vector will be propagated/packaged	In vivo or in vitro?	Cell type where expressed	Gene/gene family to be inserted, deleted, upregulated or downregulated	Original source(s) species of DNA/RNA	Biological activity/potential of gene modification	Manipulation types performed/planned	Assigned Biosafety Level(s)	Regulatory Rationale	Applicable NIH Guidelines
Lentivirus [Retroviridae/ Lentiviridae]		pLenti_PE7-2A-BSD, lenti-pegRNA-puro back bone (ADDGENE)	Replication Incompetent/ Deficient	N/A purchased (Addgene)	Both	Human	Cas9/guide RNAs against LK B1	Human ~ Murine	Other/model antigen and elicit an immune response in the murine	Repress/ Downregulate gene of interest ~ Transfect cells / introduce into in vivo model	ABSL-2 ~ BSL-2+	NIH Applicable	Section II I-D-1 ~ Section III -D-4

Biological/Microbiological Microorganism Tracking Table:

Biological/Microbiological Microorganism Tracking Table:

Microorganism for Biological/Microbiological work	Other microorganism name	List strains/serotypes for constructs	Ability to replicate in the cell	In vivo or in vitro?	Manipulation types performed/planned	Assigned Biosafety Level(s)	Regulatory Rationale	Applicable NIH Guidelines
Lactococcus [Lactis]		lactis subsp. lactis (Howard Hang of Scripps Institute)	Replication Competent	In Vivo	Culturing ~ Introduction into in vivo model	ABSL-1 ~ BSL-1	Not rDNA	
Enterococcus [Spp.]		faecalis, faecium (Howard Hang of Scripps Institute)	Replication Competent	In Vivo	Culturing ~ Introduction into in vivo model	ABSL-2 ~ BSL-2	Not rDNA	
*Other	Lactobacillus	L. plantarum (Howard Hang of Scripps Institute)	Replication Competent	In Vivo	Culturing ~ Introduction into in vivo model	ABSL-1 ~ BSL-1	Not rDNA	

Record Number: 24-0037
PI Name: Juan M. Pascual
Submission Type: Amendment
Notes: The assigned IBC member reviewed the lab protocols. The amendment includes the addition of work with AAV in mice, and the selection of non-exempt and transgenic in vivo work. The reviewer requested to change the use of AAV from in vivo to in vitro and in vivo. Additionally, the reviewer suggested updating the correct source of DNA/RNA. No other issues were raised. The reviewer recommended approval at previously approved biosafety levels.

Decision: Approved with administrative changes

Recombinant Microorganism Tracking Table:

Recombinant Microorganism Tracking Table:

Microorganism for Recombinant work	Other microorganism name	List strains/serotypes for constructs	Ability to replicate in the cell	Cell/cell type where microorganism/vector will be propagated/packaged	In vivo or in vitro?	Cell type where expressed	Gene/gene family to be inserted, deleted, upregulated or downregulated	Original source(s) species of DNA/RNA	Biological activity/potential of gene modification	Manipulation types performed/planned	Assigned Biosafety Level(s)	Regulatory Rationale	Applicable NIH Guidelines
Adeno-Associated Virus (AAV)		AAV serotypes 1 and 2 AAV Serotypes 5,8,9 RetroAAV2.Cre.GFP, RetroAAV2.GFP AAV5-EF1a-DIO-eNpHR3.0-EYFP (halorhodopsin) AAV5-EF1a-DIO-ChR2 (channelrhodopsin)	Replication Incompetent/ Deficient	293 cells	Both	In vivo	GCaMP, GFP/RFP, Cre, DREADD, channelrhodopsin, halorhodopsin, Na b2	Bacteria ~ Bacteriophage ~ Jellyfish ~ Virus	Gene Expression Regulators ~ Marker/Reporter ~ Other/Pathology	Direct inject into in vivo model ~ Express/Upregulate gene of interest ~ Repress/Downregulate gene of interest	ABSL-1 ~ BSL-2	NIH Applicable	Section II I-D-4

Laboratory Safety Registrations - 2-Year Renewals

Record Number: 19-0013
PI Name: Carl F. Nathan
Submission Type: Renewal
Notes: The assigned IBC member reviewed the lab protocols and noted minor changes. No issues were raised. The reviewer recommended approval at previously approved biosafety levels.
Decision: Approved

Recombinant Microorganism Tracking Table:

Recombinant Microorganism Tracking Table:

Microorganism for Recombinant work	Other microorganism name	List strains/serotypes for constructs	Ability to replicate in the cell	Cell/cell type where microorganism/vector will be propagated /packaged	In vivo or in vitro?	Cell type where expressed	Gene/gene family to be inserted, deleted, upregulated or downregulated	Original source(s) species of DNA/RNA	Biological activity/potential of gene modification	Manipulation types performed/planned	Assigned Biosafety Level (s)	Regulatory Rationale	Applicable NIH Guidelines
Mycobacterium [Tuberculosis]		Mutant of clpC1, clpB, clpP1, clpP2, clpX gene	Unknown	In vitro bacteria cell culture media	In Vitro	Bacterial	Down regulate clpC1 clpB, clpP 1, clpP2, cl pX gene	Bacteria	Unknown	Repress/ Downregulate gene of interest	BSL-3	NIH Applicable	Section III-D-1
Mycobacterium [Tuberculosis]		PtpA knock out (KO) Mtb strain	Replication Competent	Macrophage	In Vitro	Human	PtpA knock out	Bacteria	Gene Expression Regulators	Express/ Upregulate gene of interest	BSL-3	NIH Applicable	Section III-D-1
Mycobacterium [Tuberculosis]		H37Rv background mc6020, 6220, 6030, 6230, 6206	Attenuated ~ Replication Incompetent/Deficient	M. tuberculosis	In Vitro	Bacterial	lysA and panCD are deleted in mc6020 and 6220. panCD and RD1 are deleted in 6030 and 6230; additionally, 6230 does not have a hygromycin-marker. panCD, leuC, and leuD are deleted in mc6206. 7901 (?panCD ?leuCD ?metA) and 7902 (?panCD ?leuCD ?arg)	Bacteria	Gene Expression Regulators	Repress/ Downregulate gene of interest ~ Transfect cells	BSL-2+	NIH Applicable	Section III-D-1
Mycobacterium [Smegmatis]		not named	Replication Competent	M. smegmatis	In Vitro	Bacterial	PrcBA (proteasome) and ClpB gene is deleted	Bacteria	Gene Expression Regulators	Repress/ Downregulate gene of interest ~ Transfect cells	BSL-1	NIH Applicable	Section III-D-2
Mycobacterium [Tuberculosis]		Erdman Background	Replication Competent	M. tuberculosis	In Vitro	Bacterial	Mutations/ deletions in: rpoB (for rifampicin); katG, inhA (for isoniazid); rpsL (for streptomycin); embB (for ethambutol); ethA, inhA (for ethionamide); gyrA (for moxifloxacin). Also mutations in chaperone genes, such as dnaJ1, dnaJ2 or dnaK	Bacteria	Gene Expression Regulators	Repress/ Downregulate gene of interest ~ Transfect cells	BSL-3	NIH Applicable	Section III-D-1
Mycobacterium [Bovis - BCG Vaccine Strain]		Pasteur, Moreau, Frappier (ATCC 35735), Tice (ATCC 35743)	Attenuated ~ Replication Competent	M. Bovis BCG	In Vitro	In vivo ~ Bacterial	Numerous genes may be deleted, such as those encoding DlaT, Lpd, HOAS, PdhC, AceE, PrcBA, Mpa, UvrB, Rv3671c, Rv3461c, Rv0431c, ClpB, HspX, Rv1151c.	Bacteria	Antibiotic Resistance ~ Gene Expression Regulators ~ Marker/Reporter	Repress/ Downregulate gene of interest ~ Transfect cells	BSL-2	NIH Applicable	Section III-D-1
Mycobacterium [Tuberculosis]		H37Rv, strain 1(S53 1L), strain2 (L533 P)	Replication Competent	M. tuberculosis	In Vitro	Bacterial	thyA (thymidylatesynthase A), RpoB(rifampin resistant RNA polymerase)	Bacteria	Antibiotic Resistance ~ Gene Expression Regulators	Express/ Upregulate gene of interest ~ Transfect cells	BSL-3	NIH Applicable	Section III-D-1 ~ Section III-D-4
Mycobacterium [Tuberculosis]		H37Rv background	Replication Competent	M. tuberculosis	In Vitro	Bacterial	Likely mutations/deletions in: rpoB (for rifampicin); katG, inhA (for isoniazid); rpsL (for streptomycin); embB (for ethambutol); ethA, inhA (for ethionamide); gyrA (for moxifloxacin)	Bacteria	Gene Expression Regulators	Express/ Upregulate gene of interest ~ Repress/Downregulate gene of interest ~ Transfect cells	BSL-3	NIH Applicable	Section III-D-1 ~ Section III-D-4
Mycobacterium [Tuberculosis]		H37Rv, Erdman, CDC1551	Replication Competent	M. tuberculosis	Both	In vivo ~ Bacterial	Numerous genes may be deleted, such as those encoding DlaT, Lpd, HOAS, PdhC, AceE, PrcBA, Mpa, UvrB, Rv3671c,	Bacteria ~ Jellyfish	Antibiotic Resistance ~ Gene Expression Regulators	Direct inject into in vivo model ~ Express/ Upregulate	ABSL-3 ~ BSL-3	NIH Applicable	Section III-D-1 ~ Section III-D-4

							Rv3461 c, Rv0431c, ClpB, H spX, Rv11 51c. In our transposon mutant libr aries, all n on-essential genes ma y be dirupt ed; this ma y be about 3000 genes. In our over-expres sion librari es, any gen es may be over-expre ssed; this i s about 4000 genes. BG1 (rpf q uintuple K O of H37Rv.		~ Marke r/Report er	gene of interest ~ Transfect cell s			

Biological/Microbiological Microorganism Tracking Table:

Biological/Microbiological Microorganism Tracking Table:

Microorganism for Biological/Microbiol ogical wo rk	Other microorganis m name	List strains/serotypes for constructs	Ability to replicate in the cell	In vivo or in vitro?	Manipulation ty pes performed/planned	Assigned Biosafety Level(s)	Regulatory Rationale	Applicable NIH Guidelines
*Other	Mycobacterium Abscessus	M. abscessus ATC C 19977	Replication Competent	Both	Conduct Multiplicity of infection (MOI) studies ~ Culturing ~ Introduction into in vivo model ~ Isolation DNA/RNA	ABSL-2 ~ BSL-2	Not rDNA	
Salmonella [Typhimurium]		not named	Replication Competent	In Vitro	Culturing	BSL-2	Not rDNA	
Pseudomonas [Aeruginosa]		not named	Replication Competent	In Vitro	Culturing	BSL-2	Not rDNA	
Candida [Albicans]		not named	Replication Competent	In Vitro	Culturing	BSL-2	Not rDNA	
Mycobacterium [Avium-Intracelluare]		not named	Replication Competent	In Vitro	Culturing	BSL-2	Not rDNA	
Staphylococcus [Aureus]		not named	Replication Competent	In Vitro	Culturing	BSL-2	Not rDNA	
Mycobacterium [Fortuitum]		not named	Replication Competent	In Vitro	Culturing	BSL-2	Not rDNA	
Mycobacterium [Tuberculosis]		Clinical sputum samples (Rif sensitive) Haiti, Clinical strain (HN878)	Replication Competent	In Vitro	Other/analyze for DD Mtb by limiting dilution method, RNA isolation	BSL-3	Not rDNA	
Mycobacterium [Bovis]		ATCC 19210	Replication Competent	In Vitro	Culturing	BSL-3	Not rDNA	
Mycobacterium [Tuberculosis]		H37Ra (avirulent reference strain)	Attenuated	In Vitro	Culturing	BSL-2	Not rDNA	

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Record Number: 19-0577

PI Name: Randi B. Silver

Submission Type: Renewal

Notes: The assigned IBC member reviewed the lab protocols and noted all COVID related research has been removed. The committee suggested to include recommendations for RSV vaccination in this approval. No other issues were raised. With this administrative change, the reviewer recommended approval at previously approved biosafety levels.

Decision: Approved with administrative changes

Biological/Microbiological Microorganism Tracking Table:

Biological/Microbiological Microorganism Tracking Table:

Microorganism f or Biological/Microbiolo gical work	Other microorganis m name	List strains/serotypes for constructs	Ability to replicate in the cell	In vivo or in vitro?	Manipulation ty pes performed/planned	Assigned Biosafety Level(s)	Regulatory Rationale	Applicable NIH Guidelines
Respiratory Syncytial Virus [Paramyxoviridae/Pneu movirus]		A2 (VR-1540, ATCC)	Replication Competent	Both	Culturing ~ Introduction into in vivo model	ABSL-2 ~ BSL-2	Not rDNA	

Record Number: 19-0592
PI Name: Sabine Ehrt
Submission Type: Renewal
Notes: The assigned IBC member reviewed the lab protocols and noted no changes associated with this renewal. No issues were raised. The reviewer recommended approval at previously approved biosafety levels.
Decision: Approved

Recombinant Microorganism Tracking Table:

Recombinant Microorganism Tracking Table:

Microorganism for Recombinant work	Other microorganism name	List strains/serotypes for constructs	Ability to replicate in the cell	Cell/cell type where microorganism/vector will be propagated /packaged	In vivo or in vitro?	Cell type where expressed	Gene/gene family to be inserted, deleted, upregulated or downregulated	Original source(s) species of DNA/RNA	Biological activity/potential of gene modification	Manipulation types performed/ planned	Assigned Biosafety Level (s)	Regulatory Rationale	Applicable NIH Guidelines
Mycobacterium [Bovis - BCG Vaccine Strain]		BCG vaccine strain and derived mutants with gene deletions or expressing reporter genes or expressing genes from Mtb.	Attenuated ~ Replication Competent	N/A	Both	Bacterial	We construct mutants that have defects in a variety of biological functions including in central carbon metabolism, transcription, RNA maturation/turnover, translation, protein transport/maturation/ turnover, cell envelope synthesis/integrity, chromosome maintenance/integrity, central metabolism, respiration, co factor bio synthesis, or DNA replication. We also target genes for mutagenesis whose function is unknown but that are essential for growth in vitro or during infections and express genes we expect to be toxic for mycobacteria, which includes RNAases, DNases and genes whose products can degrade the mycobacterial cell envelope. In work that aims to generate a vaccine to protect against infection with SARS-CoV-2 we will use BCG strains that express the receptor binding domain (RBD) of the SARS-CoV-2 spike protein to immunize mice and assess immune responses. To develop an improved but safe BCG vaccine, we will use a recombinant BCG strain, BCG::RD1 that expresses the RD1 (region of difference) locus of the Mtb genome on a cosmid. The RD1 region contains the Esx1 system which is a virulence factor of Mtb	Bacteria ~ Bacteriophage ~ Jellyfish Virus	Allergen~ Antibiotic Resistance ~ Gene Expression Regulators ~ Marker/Reporter ~ Unknown ~ Virulence Factors or Enhancers	Express/ Upregulate gene of interest ~ Repress/Downregulate gene of interest	ABSL-2 ~ BSL-2	NIH Applicable	Section II I-D-1 ~ Section III-D-4
Mycobacterium [Tuberculosis]		H37Rv, Erdman, HN878, CDC1551, various clinical isolates representative of the major Mtb lineages (all drug susceptible) and derivatives with specific gene deletions or expressing reporter genes.	Replication Competent ~ Replication Incompetent/Deficient	N/A	Both	Bacterial	We construct mutants that have defects in a variety of biological functions including in central metabolism, transcription, RNA maturation/turnover, translation, protein transport/maturation/ turnover, cell envelope synthesis/integrity, chromosome maintenance/integrity, central metabolism, respiration, cofactor biosynthesis, or DNA replication. We also target genes for mutagenesis whose function is unknown but that are essential for growth in vitro or during infections and express genes we expect to be toxic for mycobacteria, which includes RNases, DNases and genes whose products can degrade the mycobacterial cell envelope.	Bacteria ~ Bacteriophage ~ Jellyfish	Antibiotic Resistance ~ Gene Expression Regulators ~ Marker/Reporter ~ Unknown ~ Virulence Factors or Enhancers	Express/ Upregulate gene of interest ~ Repress/Downregulate gene of interest	ABSL-3 ~ BSL-3	NIH Applicable	Section II I-D-1 ~ Section III-D-4
*Other	MycoMar	Phagemid derived from the mycobacteriophage L5; carries marin er transposon; replication	Replication Competent ~ Replication Incompetent/Deficient	M. smegmatis, M. tuberculosis, M. bovis BCG	In Vitro	Bacterial	mariner transposase	Bacteriophage	Other/Facilitates insertion of transposons into mycobacterial genomes	Repress/ Downregulate gene of interest	BSL-3	NIH Applicable	Section II I-D-1 ~ Section III-D-2

		competent at 30C; unable to replicate at 37C											
Mycobacterium [Smegmatis]		mc2155 and derived mutants with gene deletions or expressing reporter genes	Replication Competent	N/A	In Vitro	Bacterial	We clone mycobacterial genes that participate in a wide variety of biological functions including in transcription, RNA maturation/turnover, translation, protein transport/maturation/ turnover, cell envelope synthesis/integrity, chromosome maintenance/integrity, central metabolism, respiration, co factor biosynthesis, or DNA replication. We also target genes for mutagenesis whose function is unknown but that are essential for growth in vitro or during infections and express genes we expect to be toxic for mycobacteria, which includes RNases, DNases and genes whose products can degrade the mycobacterial cell envelope	Bacteria~ Bacteriophage ~ Jellyfish	Antibiotic Resistance ~ Gene Expression Regulators ~ Marker/Reporter ~ Unknown ~ Virulence Factors or Enhancers	Express/Upregulate gene of interest ~ Repress/Downregulate gene of interest	BSL-2	NIH Applicable	Section II I-D-2
Escherichia coli [K12]	E. coli / mycobacteria shuttle plasmids	DH5 alpha, Mach 1, DB3.1	Attenuated ~ Replication Competent	N/A	In Vitro	Bacterial	E. coli primarily serves as a cloning host. We clone mycobacterial genes that participate in a wide variety of biological functions including in transcript ion, RNA maturation/turnover, translation, protein transport/maturation/turnover, cell envelope synthesis/integrity, chromosome maintenance/integrity, central metabolism, respiration, cofactor biosynthesis, or DNA replication. We also target gen es for mutagenesis whose function is unknown but that are essential for growth in vitro or during infections and express genes we ex pect to be toxic for mycobacteria, which includes RNases, DNases and genes whose products ca n degrade the mycobacterial cell envelope. We also use E. coli for the expression and purification of mycobacterial proteins. These proteins include enzymes in central carbon metabolism.	Bacteria ~ Bacteriophage ~ Jellyfish	Antibiotic Resistance ~ Ge ne Expression Regulators ~ Marker/Reporter ~ Unknown ~ Virulence Factors or Enhancers	Express/ Upregulate gene of interest ~ Repress/Downregulate gene of interest	BSL-1	NIH Applicable	Section II I-D-2
*Other	E. coli / mycobacteria shuttle plasmids	DH5 alpha, Mach 1, DB3.1	Attenuated ~ Replication Competent	E. coli	In Vitro	Bacterial	These plasmids contain mycobacterial genes that participate in a wide variety of biological functions including in transcription, RNA maturation/turnover, translation, protein transport/maturation/turnover, cell envelope synthesis/integrity, chromosome maintenance/integrity, central metabolism, respiration, cofactor biosynthesis, or DNA replication. We also clone genes for mut agenesis whose function is unknown but that are essential for growth in vitro or during infections. We furthermore clone genes that we expect to be toxic for mycobacteria, which includes RNAases, DNases and genes whose products can degrade the mycobacterial cell envelope.	Bacteria ~ Bacteriophage ~ Jellyfish	Antibiotic Resistance ~ Gene Expression Regulators ~ Marker/Reporter ~ Unknown ~ Virulence Factors or Enhancers	Express/ Upregulate gene of interest ~ Repress/Downregulate gene of interest	BSL-2	NIH Applicable	Section II I-D-2

Biological/Microbiological Microorganism Tracking Table:

Biological/Microbiological Microorganism Tracking Table:

Microorganism for Biological/Microbiological work	Other microorganism name	List strains/serotypes for constructs	Ability to replicate in the cell	In vivo or in vitro?	Manipulation types performed/planned	Assigned Biosafety Level(s)	Regulatory Rationale	Applicable NIH Guidelines
Mycobacterium [Tuberculosis]		M. tuberculosis (delta) pncA, resistant to PZA (provided by NIH collaborator)	Replication Competent	In Vitro	Culturing ~ Isolation DNA/RNA ~ Other/ Isolation of M. tb mutants that are spontaneously resistant to pyrazinamide or	BSL-3	Not rDNA	

					pyrazinoic acid			
Bacteroides [Spp.]		not applicable, human isolates, not recombinant	Replication Competent	In Vivo	Introduction into in vivo model	ABSL-2 ~ BSL-2	Not rDNA	
Clostridium [Spp.]		not applicable, human isolates, not recombinant	Replication Competent	In Vivo	Introduction into in vivo model	ABSL-2 ~ BSL-2	Not rDNA	
Salmonella [Typhimurium]		LT2	Replication Competent	In Vitro	Conduct Multiplicity of infection (MOI) studies ~ Culturing	BSL-2	Not rDNA	
Mycobacterium [Tuberculosis]		H37Rv, Erdman, HN878, CDC1551, various clinical isolates representative of the major Mtb lineages	Replication Competent	Both	Culturing ~ Introduction into in vivo model ~ Isolation DNA/RNA	ABSL-3 ~ BSL-3	Not rDNA	
Mycobacterium [Smegmatis]		mc2 155 and derivatives with specific gene deletions	Replication Competent	In Vitro	Culturing ~ Isolation DNA/RNA	BSL-1	Not rDNA	
Mycobacterium [Bovis - BCG Vaccine Strain]		BCG Pasteur; BCG Pasteur::RD1	Attenuated ~ Replication Competent	Both	Culturing ~ Introduction into in vivo model ~ Isolation DNA/RNA	BSL-2	Not rDNA	

Record Number: 19-0598
PI Name: Daniel W. Fitzgerald
Submission Type: Renewal
Notes: The assigned IBC member reviewed the lab protocols and the addition of RTqPCR DNA/RNA experiment. The reviewer requested to add language for the post-exposure approaches for HIV. Additionally, the reviewer requested to clarify if "introduction into in vivo model" work with M. Tuberculosis is associated with in vitro macrophage experiments? No other issues were raised. With these administrative changes, the reviewer recommended approval at previously approved biosafety levels.
Decision: Approved with administrative changes

Biological/Microbiological Microorganism Tracking Table:

Biological/Microbiological Microorganism Tracking Table:

Microorganism for Biological/Microbiological work	Other microorganism name	List strains/serotypes for constructs	Ability to replicate in the cell	In vivo or in vitro?	Manipulation types performed/planned	Assigned Biosafety Level(s)	Regulatory Rationale	Applicable NIH Guidelines
Human Immunodeficiency Virus (HIV) [Retroviridae/Lentiviridae Types 1 and 2]		Human immune deficiency virus 1, 2. Subtypes A, C, D	Replication Competent	In Vitro	Isolation DNA/R NA	BSL-2	Not rDNA	
Mycobacterium [Tuberculosis]		H37Rv, Erdman, CDC 1551	Replication Competent	In Vitro	Conduct Multiplicity of infection (MOI) studies	ABSL-3 ~ BSL-3	Not rDNA	
Mycobacterium [Smegmatis]		smegmatis	Attenuated ~ Replication Competent	In Vitro	Conduct Multiplicity of infection (MOI) studies ~ Culturing	BSL-2	Not rDNA	
Mycobacterium [Bovis - BCG Vaccine Strain]		Pasteur	Attenuated ~ Replication Competent	In Vitro	Conduct Multiplicity of infection (MOI) studies ~ Culturing	BSL-2+	Not rDNA	

Record Number: 19-0602
PI Name: Kyu Y. Rhee
Submission Type: Renewal

Notes: The assigned IBC member reviewed the lab protocols and noted no changes associated with this renewal. The reviewer requested to change the answer to yes for samples known to be infectious and the use of DURC question. No other issues were raised. With these administrative changes, the reviewer recommended approval at previously approved biosafety levels.
Decision: Approved with administrative changes

Recombinant Microorganism Tracking Table:

Recombinant Microorganism Tracking Table:

Microorganism for Recombinant work	Other microorganism name	List strains/serotypes for constructs	Ability to replicate in the cell	Cell/cell type where microorganism/vector will be propagated /packaged	In vivo or in vitro?	Cell type where expressed	Gene/gene family to be inserted, deleted, upregulated or downregulated	Original source(s) species of DNA/RNA	Biological activity/potential of gene modification	Manipulation types performed /planned	Assigned Biosafety Level(s)	Regulatory Rationale	Applicable NIH Guidelines
Mycobacterium [Tuberculosis]		Mtb H37 Rv strain s: Wild type Erd man, ECCCAB1 (mutant strain), and ECCC AB1/G (mutant strain with deleted gene reintroduced)	Replication Competent	none- for axenic culture	In Vitro	Bacterial	Hygromycin gene, ECCC (deleted and reintroduced), Hygromycin gene	Bacteria	Antibiotic Resistance ~ Marker/Reporter	Express/ Upregulate gene of interest ~ Transfect cells	BSL-3	NIH Applicable	Section II I-D-1
Mycobacterium [Smegmatis]		MC2 155	Replication Competent	none- for axenic culture	In Vitro	Bacterial	various metabolic enzymes, genes of unknown function. M. tuberculosis genes will not be expressed in M. smegmatis if they have a known or expected role in virulence.	Bacteria	Antibiotic Resistance ~ Marker/Reporter	Express/ Upregulate gene of interest ~ Transfect cells	BSL-3	NIH Applicable	Section II I-D-2
Escherichia coli [K12]		K12 (lab oratory)	Replication Competent	none- only for axenic culture	In Vitro	Bacterial	various metabolic enzymes, genes of unknown function	Bacteria	Antibiotic Resistance ~ Marker/Reporter ~ Other/ metabolism	Express/ Upregulate gene of interest	BSL-1	NIH Applicable	Section II I-D-2

Biological/Microbiological Microorganism Tracking Table:

Biological/Microbiological Microorganism Tracking Table:

Microorganism for Biological/Microbiological work	Other microorganism name	List strains/serotypes for constructs	Ability to replicate in the cell	In vivo or in vitro?	Manipulation types performed/planned	Assigned Biosafety Level(s)	Regulatory Rationale	Applicable NIH Guidelines
Mycobacterium [Tuberculosis]		CDC1551 DkasB, DkasB:kasB (mutant strain with deleted gene reintroduced)	Attenuated ~ Replication Competent	In Vitro	Culturing ~ Other/ Axenic culture	BSL-3	Not rDNA	
Mycobacterium [Tuberculosis]		clinical patient isolates (pan sensitive), drug sensitive TB meningitis patient samples	Replication Competent	In Vitro	Culturing ~ Other/ axenic culture, analyze chemical composition	BSL-3	Not rDNA	
Mycobacterium [Tuberculosis]		H37Rv, Erdman, CDC1551 wild type	Replication Competent	In Vitro	Culturing ~ Other/ axenic culture	BSL-3	Not rDNA	
Mycobacterium [Bovis - BCG Vaccine Strain]		BCG	Attenuated ~ Replication Competent	In Vitro	Culturing ~ Other/ axenic culture	BSL-2	Not rDNA	
Staphylococcus [Aureus]		various primary clinical isolates	Replication Competent	In Vitro	Culturing ~ Other/ axenic culture	BSL-2	Not rDNA	
Enterococcus [Faecium]		various primary clinical isolates	Replication Competent	In Vitro	Culturing ~ Other/ axenic culture	BSL-2	Not rDNA	

Record Number: 19-0621
PI Name: Timothy E. McGraw
Submission Type: Renewal
Notes: The assigned IBC member reviewed the lab protocols and noted minor changes associated with this renewal. No issues were raised. The reviewer recommended approval at previously approved biosafety levels.
Decision: Approved

Recombinant Microorganism Tracking Table:

Recombinant Microorganism Tracking Table:

Microorganism for Recombinant work	Other microorganism name	List strains/serotypes for constructs	Ability to replicate in the cell	Cell/cell type where microorganism/vector will be propagated /packaged	In vivo or in vitro?	Cell type where expressed	Gene/gene family to be inserted, deleted, upregulated or downregulated	Original source(s) species of DNA/RNA	Biological activity/potential of gene modification	Manipulation types performed/planned	Assigned Biosafety Level(s)	Regulatory Rationale	Applicable NIH Guidelines
Retrovirus [Amphotropic]		pSiren-retorQ	Replication Incompetent/ Deficient ~ Self-Inactivating	293T	In Vitro	In vivo ~ Human	shRNA targeting genes involved in insulin signal transduction	Human ~ Murine	Other/ Regulators of insulin signaling and protein trafficking	Express/ Upregulate gene of interest ~ Transfect cell line	BSL-2	NIH Applicable	Section II I-D-1 ~ Section III-D-3
Lentivirus [Retroviridae/Lentiviridae]		pLenti6.3 invitrogen	Replication Incompetent/ Deficient ~ Self-Inactivating	293T cel ls	In Vitro	Human	Glut4, GI P receptor	Murine	Gene Expression Regulators ~ Marker/Reporter	Create virions ~ Express/Upregulate gene of interest ~ Transfect cell line ~ Transfect cells / introduce into in vivo model	BSL-2+	NIH Applicable	Section II I-D-1 ~ Section III-D-3
*Other	Sleeping Beauty Transpose Vector	Cloned in ORM2 cDNA insert Clon ed in ZA G cDNA insert	Replication Incompetent/ Deficient	Murine liver cells	Both	In vivo	orosomucoid 2, apo lipoprotien H, cerul oplasmin, histidine-r ich protei n, phosph olipase D 1, and alp ha2glycop rotein-sin c	Bacteria	Gene Expression Regulators	Express/ Upregulate gene of interest ~ Repress/Downregulate gene of interest	ABSL-2 ~ BSL-2	NIH Applicable	Section II I-D-1 ~ Section III-D-4
Adeno- Associated Virus (AAV)		AAV8-H 1-shRNA vector	Replication Incompetent/ Deficient	Murine adipocytes and liver cells	Both	In vivo	orosomucoid 2, apo lipoprotien H, cerul oplasmin, histidine-rich protei n, phosph olipase D 1, and alp ha2glycop rotein-sin c, GIPR, b-arrestin2	Bacteria	Gene Expression Regulators	Express/ Upregulate gene of interest ~ Transfect cell line	ABSL-1 ~ BSL-1	NIH Applicable	Section II I-D-4

Acknowledgement of Laboratory Safety Registrations: No IBC-Applicable Work Conducted

Record Number	PI Name	Laboratory Safety Registration Submission Type
19-0614	Lawrence G Palmer	Lab Registration - Renewal
19-0616	Xin-Yun Huang	Lab Registration - Renewal
23-0127	Silvia Chiara Formenti	Lab Registration - Renewal

Laboratory Safety Registrations: Exempt

Record Number	PI Name	Laboratory Safety Registration Submission Type
19-0619	David Eliezer	Lab Registration - Renewal
25-0071	Rie Nygaard	Lab Registration - Initial

Acknowledgment of Closed Laboratory Safety Registrations

Record Number	PI Name
19-0292	Dianna E. Willis
19-0640	Gary E. Gibson
19-0679	Tim Vartanian
19-0752	Laurel Anne Monticelli

The meeting adjourned at 10:25 PM.