SAFETY Meeting Minutes
UAMS IBC

MEETING TIME RECORDS

Meeting start time: 8/1/2025 12:00 PM
Meeting end time: 8/1/2025 12:44 PM
Meeting type: Virtual

Name of Regular/Alternate Member	Status (Member or Alternate)	Present by Teleconference?
Ha-Neui Kim	Member	Yes
Matthew Jorgenson	Member	Yes
Robert Hunter	Member	Voted via email
Kimberly Murphy	Member	Yes
Lindsey Clark	Member	No
James Douglas	Member	Yes
Amanda Holloway	De Novo	No
James Bishop	Member	No
Youssef Aachoui	Member	No
Jia Liu	Member	Yes
Yuet-Kin Leung	Member	Yes
Melaney Gee	Member	Yes
Mark Manzano	Member	Yes
Christine Simecka Morgan	Member	No
Antino Allen	Member	Yes
KyoungHyun Kim	Member	Yes
James Townsend	De Novo	No
Shengyu Mu	Member	Yes
Kikumi Ono-Moore	De Novo	No
Zhiqiang Qin	Member	Yes

QUORUM INFORMATION

Number of SAFETY members on the roster: 17
Number required for quorum: 9
Quorum: Present

All members present via teleconference received all pertinent material before the meeting and were able to actively and equally participate in all discussions.

ATTENDANCE STATUS AND VOTING KEY	
ABSTAIN:	Present for the vote but not voting "For" or "Against."
ABSENT:	Absent for discussion and voting for reasons other than a conflict of interest.
RECUSED:	Absent from the meeting during discussion and voting because of a conflict of interest.
SUBSTITUTION:	When regular members and their alternate(s) are listed in the ATTENDANCE table above and an alternate member serves as a substitute for the regular member this identifies the name of the alternate to indicate which individual is serving as the voting member for this vote. May be deleted if there are no substitutions.

GUEST NAMES

Previous Meeting minutes approved: No

REVIEW OF SUBMISSIONS

The review and discussion of the protocols listed below included the following elements: the agents involved and their characteristics; types of manipulations planned; the source(s) and nature of the nucleic acid sequences; the host organism(s) and vector(s) to be utilized; whether expression of a foreign gene is intended and, if so, the specific protein(s) to be produced; the containment conditions to be applied, including biosafety level and any special provisions; and the relevant sections of the NIH Guidelines.

All IBC members present were reminded to identify any conflicts of interest as each registration was reviewed.

For each protocol reviewed, it was confirmed that the Principal Investigator (PI) and laboratory personnel have received appropriate training in the safe conduct of research.

Initial Protocol

1. Review of SPROTO202500000048

Title:	TME in breast cancer
Investigator:	Ren Xu
Submission ID:	SPROTO202500000048
Description:	Breast cancer is the most common cancer in women and remains a major cause of cancer-related deaths. Increasing evidence shows that the tumor microenvironment (TME) plays a key role in breast cancer progression and drug resistance. Our research focuses on the tumor microenvironment (TME), which plays a critical role in breast cancer progression and treatment resistance. The long-term goal is to identify biomarkers and therapeutic targets within the TME that can be used to develop new strategies to prevent breast cancer progression and improve patient outcomes. We are studying several genes that regulate interactions between cancer cells and the surrounding extracellular matrix, including Hsp47, PLOD2, P4HA1, and ASPN. These factors influence how collagen is organized and how cancer cells migrate and invade other tissues. Through cell-based studies and genetically engineered mouse models, we aim to understand how these genes contribute to tumor growth, metastasis, and resistance to therapy.
Agent Containment:	Biological Containment Levels: • MDA-MB-231 (Human TNBC cell line): BSL-2 • 4T1 Murine Cell Line: BSL-2 • E. coli: BSL-1 • Lentivirus: BSL-2
Applicable NIH Guidelines:	• Section III-F-3 • Section III-F • Section III-F-5 • Section III-D-1 • Section III-D

a. **Determination:** Modifications Required

b. **Required modifications:**
Minor revisions necessary. Please see comments throughout protocol and respond to all queries.

c. **Votes:**

For:	13
Against:	0
Recused:	0
Absent:	4
Abstained:	0

De Novo Review

2. Review of SPROTO202500000051

Title:	Innate Immunity Against Gram-Negative Bacterial Infections
Investigator:	Youssef Aachoui
Submission ID:	SPROTO202500000051
Description:	Central Question: How does the mammalian innate immune system detect and eliminate Gram-negative bacterial pathogens through inflammasome activation? Primary Objectives: 1. Evaluate the roles of pathogen recognition receptors (PRRs) such as NLRP3, NLRC4, Pyrin, and caspase-11 in the detection of Gram-negative pathogens, including Burkholderia thailandensis, Salmonella Typhimurium, Pseudomonas aeruginosa, and Yersinia pseudotuberculosis in bone marrow-derived macrophages and neutrophils. 2. Investigate how inflammasomes, activated by PRRs that sense microbial components like lipopolysaccharides (LPS), flagellin, and toxin modifications, drive caspase activation, release of IL-1β and IL-18, and pyroptosis in vivo to combat Gram-negative infections. Methods/Approach: The study will use infection models and in vitro assays to examine innate immune responses to Gram-negative pathogens. Wild-type and inflammasome-deficient mice will be infected with various bacteria, and bacterial loads in tissues like the spleen and liver will be quantified. Immune responses will be analyzed using ELISA, Western blotting, flow cytometry, histochemistry, and immunostaining. In vitro, bone marrow-derived macrophages and neutrophils from wild-type and PRR-knockout mice will be stimulated with the pathogens to assess PRR-mediated responses. CRISPR-Cas9 will be utilized for genetic manipulation to silence inflammasome components, such as caspases, NLRs, and GSDMD, in order to clarify their roles. Additionally, virulence factors, such as type III secretion system proteins that affect Pyrin activation, will be cloned, expressed, and tested for their ability to trigger inflammasome activation. This will be measured by the release of IL-1β and IL-18, pyroptosis induction, and the evaluation of phagocytic cell activation and recruitment in both intracellular and

	extracellular infection contexts.
Agent Containment:	Biological Containment Levels: • Animal Blood: BSL-2 • Animal Tissue: BSL-2 • Retrovirus: BSL-2 • Lentivirus: BSL-2 • Shigella flexneri: BSL-2 • E. coli: BSL-2 • Pseudomonas aeruginosa: BSL-2 • Yersinia pestis: BSL-2 • Burkholderia thailandensis: BSL-2 • Salmonella enterica: BSL-2 • Yersinia pseudotuberculosis: BSL-2 • HEK293T Human Cell Line: BSL-2 • U937: BSL-2 • THP-1: BSL-2 • Mouse Bone Marrow Macrophages: BSL-2 • RAW 264.7 Macrophage Cell Line: BSL-2 • Phoenix Ecotropic (Phoenix-ECO) Human Cell Line: BSL-2 • HeLa cells: BSL-2 • J774: BSL-2 • Mouse Embryonic Fibroblast (MEF) Cell Line: BSL-1
Applicable NIH Guidelines:	• Section III-D • Section III-D-1-a • Section III-D-2

a. **Determination:** Modifications Required

b. **Required modifications:**
Minor revisions necessary. Please see comments throughout protocol and respond to all queries.

c. **Votes:**

For:	13
Against:	0
Recused:	0
Absent:	4
Abstained:	0

De Novo Review

3. Review of SPROTO202500000046

Title:	Developing a genetic toolbox to engineer bacterial glycoconjugates (BP372)
Investigator:	Matthew Jorgenson
Submission ID:	SPROTO202500000046
Description:	Glycoconjugate vaccines train immune systems to stop bacterial infections before they start, but they are too expensive to manufacture to be made widely available for individuals living in middle and low-income countries. Protein Glycan Coupling Technology (PGCT) offers a low-cost alternative to glycoconjugate vaccine manufacture by using bacteria as production platforms. PGCT involves expression of a glycan, nontoxic carrier protein, and coupling enzyme, usually in the biotechnology standard bacterium *Escherichia coli*. PGCT occurs in two stages: (1) glycan expression and (2) coupling. Briefly, glycans assembled on the lipid carrier undecaprenyl phosphate (Und-P) form intermediates that are flipped across the cell membrane and are polymerized in the periplasmic space. Oligosaccharyltransferases (OSTases) like PglB from *Campylobacter jejuni* then transfer glycans off Und-P and onto glycotags on carrier proteins to produce glycoproteins. One challenge with PGCT is that vaccine yields from this approach remain persistently low. Since Und-P availability limits glycan expression, we will determine whether increasing Und-P levels in *E. coli* increases protein glycosylation efficiency in PGCT. We will test the effect of increased Und-P availability across a set of glycans and PGCT systems.
Agent Containment:	Biological Containment Levels: • E. coli: BSL-2 • E. coli: BSL-2 • Yersinia enterocolitica (NCTC 11175): BSL-2
Applicable NIH Guidelines:	• Section III-D-1 • Section III-D-2 • Section III-D

a. **Determination:** Modifications Required

b. **Required modifications:**
Minor revisions necessary. Please see comments throughout protocol and respond to all queries.

c. **Votes:**
For: 12
Against: 0

Recused: 0
Absent: 4
Abstained: 1

Amendment

4. Review of SAMEND202500000082

Title:	Amendment for SPROTO202400000035
Investigator:	MD MOKARRAM HOSSAIN
Submission ID:	SAMEND202500000082
Description:	Adding relevant AUP information to safety protocol.
Agent Containment:	Biological Containment Levels: • HEK293T Human Cell Line: BSL-2 • T47D: BSL-2 • Staphylococcus aureus: BSL-2 • B16F10 Murine Melanoma: BSL-2 • Human Serum: BSL-2 • E0771 Murine Cell Line: BSL-2 • Staphylococcus aureus: BSL-2 • Human Pancreatic Cancer Cells: BSL-2 • Primary Human Tissue: BSL-2 • SKBR3 Human Cell Line: BSL-2 • THP-1: BSL-2 • Diphtheria Toxin: BSL-2 • MC38 Murine Colon Carcinoma: BSL-2 • MDA-MB-231 (Human TNBC cell line): BSL-2 • KPCY Mouse Pancreatic Cancer Cell Line (7160c2): BSL-2 • CT26: BSL-2 • H358 Human Cell Line: BSL-2 • RAW 264.7 Macrophage Cell Line: BSL-2 • Human Plasma: BSL-2 • Human T Cells (Lymphocytes): BSL-2 • Lentivirus: BSL-2 • SKOV3: BSL-2 • Pertussis Toxin (PTX): BSL-2 • 4T1 Murine Cell Line: BSL-2 • E. coli: BSL-2 • Human Blood: BSL-2
Applicable NIH Guidelines:	• Section III-D-1-a • Section III-D-4-a • Section III-D-4-c-(2) • Section III-D

a. **Determination:** Modifications Required

b. **Required modifications:**

Minor revisions necessary. Please see comments throughout protocol and respond to all queries.

c. **Votes:**

For:	13
Against:	0
Recused:	0
Absent:	4
Abstained:	0

REVIEW OF OTHER AGENDA ITEMS

No other agenda items for review.