IBC COMMITTEE MINUTES
July 1, 2024
Virtual, 9:00 a.m.

MEMBERS PRESENT
Primary:

	Name	College
X	**Cassandra (Dawn) Pauling	r/sNA molecules, Biosafety, Animal Containment
X	Selene Nikaido	r/sNA molecules, Plant Expert
X	Deb Hudman	Community Representative/Non-Affiliate
X	Rachelle Beattie	Community Representative/Non-Affiliate
X	Cori Brown	Laboratory Facility Representative
X	William Kirby	Laboratory Staff Representative
		UCM Institutional Official (ex-officio)
X	**Kathy Schnakenberg	UCM Research Compliance Officer-Biosafety Adm (ex-officio)

**RCR Training Complete

MEMBERS ABSENT:

MINUTE TAKER: Kathy Schnakenberg

MINUTES

The minutes of 6/14/2024 were approved with/**without** revision. Motion to approved made by Dawn second-Selene. Approved with a vote of 6/0.

PROTOCOLS APPROVED FOLLOWING REVISION

PI Name	Project Title	Date	Action
Pauling, Dawn	Tick and Tick-borne Pathogen Surveillance in Missouri Wildlife		
Pauling, Dawn	Surveillance for Pseudogymnoascus destructans (Pd) within cave hibernacula of Missouri bats		

Business Items

Topic	Discussion	Action	Vote
Registration form vs. Risk Assessment	Dawn explained the difference and purpose of each form to clarify for the committee.	N/A	

PROTOCOLS REVIEWED BY COMMITTEE

PI Name and Title of Protocol: *Dawn Pauling, Investigating mechanisms of vector competence of fleas for transmission of Yersinia pestis*

Contact Information: pauling@ucmo.edu

Initial Review/ Continuing Review

Summary of Protocol:

The proposed work aims to understand the mechanisms of vector competence of fleas for transmitting bubonic plague caused by *Yersinia pestis*. Modern occurrences of plague continue to pose significant risks globally. In order to develop strategies to mitigate this disease, further research into the mechanisms of vector competency is needed. Previous studies have indicated selective pressures on *Y. pestis* virulence factors that are important for flea transmission. However, additional physiological and molecular responses in fleas that facilitate vector competency, such as immune responses and potential transovarial transmission, remain poorly understood. This research will investigate how the systemic responses of fleas to *Y. pestis* infection influence transmission competence. This work is part of a larger collaboration with the University of Missouri. Aim 2 of the provided document will be the primary focus but overlap will occur with Aims 1 and 3. A summary of the work to be conducted at UCM is provided below.

Specific Agent:

E. coli, Yersinia pestis, Xenopsylla cheopis (rat fleas)

Associated risks:

Pathogen exposure
Animal Handling
Laboratory Procedures
Chemical exposure

Containment process and levels:

BLS-2

Involvement of r/sNA molecules:

Conflicts of Interest:

PI Biosafety Training: CITI IBC Chair

Discussion [for each, indicate if controverted and resolution if controverted]

Issue 1: Include a screenshot of the image of plasmid pML204

Issue 2: Clarify throughout protocol which sections are taking place at UCM and which are taking place at MU.

Issue 3: Several sections reference Appendix with a blank line. Either list the appendix number or remove from materials.
Issue 4: Protocol Registration Form-Section 6-Q2- Yes is marked that the agent is on the exemptions list but If yes, section is blank. Please answer or correct.
Section 7-Q1-Research involving transfer is marked yes, but If yes, section is blank. Please answer or correct.
Question on If generating, Please clarify what is occurring at each location and replace hyphen with and.
Issue 5: Registration Form for Infectious Agents-Yersinia pestis-Toxin table-needs to be consistent with earlier information or marked N/A.
Safety measures section-Please mark Other and list shoe coverings
Issue 6: Registration Form for Infectious Agents-E-coli-Recombinant and Animal Use Information section-Clarify if only knockdown genes of fleas are being Examined or also of Y pestis. Is there a modification of the fleas only or also the mice?
Issue 7: Laboratory Specific Exposure Control Plan-Section 2 e-Emergency Evacuation Plan-this is blank.
Issue 8: The following is a requirement for approval of Investigating mechanisms of vector competence of fleas for transmission of *Yersinia pestis.*

The IBC committee recommends that an amendment to the original proposal be made prior to any experiments where transgenic animals or bacteria are created. The research plan is to determine genes that are up-regulated upon exposure to *Yersinia pestis*. These genes will be determined through RNAseq or scRNAseq. The role of the up-regulation of these genes are to be determined through knockdown experiments. Because of the proposed knockdown experiments, it seems that *a priori* determination of candidate gene functions is not expected. Response to infection may cause genes that combat or attenuate infection to be up-regulated. Knockdown of these genes' expression could potentially create GMOs that are more infectious or more susceptible to infection because genes that normally attenuate or prevent infection are disabled. These GMOs may then have dual use. Before knockdown experiments are performed, an addendum addressing the specific genes identified for knockdown are to be submitted to the IBC committee.

Documentation of Findings

Motion Selene
Second Deb
Description of Motion: Recommend that revisions are reviewed and approved by co-chair unless co-chair prefers a full committee approval upon review of the revisions.

Vote (For, Against, Abstain): Motion **Passed**/Failed 5-0-0, Total Voting = 5

Meeting adjourned at __10:08 by Deb second by Selene_____