INSTITUTIONAL BIOSAFETY COMMITTEE

DRAFT MEETING MINUTES

The University of Texas at San Antonio
Wednesday December 4th, 2024
Microsoft Teams Meeting

Minutes Prepared by: Mohammad Siddiqur Rahman Khan

MEMBERS PRESENT (need 7 for quorum)

☒Dr. Jose Lopez-Ribot, Chair, Voting

☒Dr. Janakiram Seshu, Vice-Chair, Voting

☒Mr. Mohammad Rahman Khan *ex officio*, Biosafety Officer, Laboratory Safety

☒Dr. JiehJuen Yu, Voting

☒Dr. Karl Klose, Voting

☐Dr. Marcel Perret-Gentil, Voting

☒Dr. Jurgen Engelberth, Voting, Plant Specialist

☐Dr. Astrid Cardona, Voting

☒Mr. Rich Garza, Hazardous Waste Manager with vote

☒Ms. Yolanda Acosta, *ex officio* Scientific Alternate with vote

☐Dr. Ana Vallor, Non-Affiliated, Voting

☐Dr. Shannan Hall-Ursone, Non-Affiliated, Voting

☒Dr. Soo Chan Lee, Voting (Scientific Alternate)

☒Mr. Anthony Vallejo, *ex officio*, Director of Laboratory Safety, (Scientific Alternate)

GUESTS

☒Mrs. Rachel Davis, UTSA Scholarly Resources Librarian

☐Ms. Jolyn Demarest, Occupational Health Program non-voting

☐ Dr. Hamid Badali, Voting, (Scientific Alternate)

☒Ms. Kimberly Moore, Laboratory Safety Specialist, (non-voting)

START: 09:00am **10 voting members present**

ADJOURN: 09:20 am

I. REVIEW OF THE MINUTES OF THE PREVIOUS MEETING

Minutes of Meeting held on November 6th, 2024
Score 1: Approved
Committee Decision: 10 in favor, **0** opposed, and **0** abstention

II. REVIEW OF APPLICATIONS

In reviewing each protocol discussed below, the committee gave consideration to the following specific concerns, as appropriate:

a. Adequacy of containment equipment / procedures / facilities to be implemented
b. Agent characteristics (e.g., virulence, pathogenicity, environmental stability)
c. Types of manipulations planned
d. Source(s) of the inserted DNA sequences (e.g., species)
e. Nature of the inserted DNA sequences (e.g., structural gene, oncogene)
f. Host(s) and vector(s) to be used
g. Whether or not an attempt will be made to obtain expression of a foreign gene, and if so, the protein that will be produced.

IBC# 116: CHARACTERIZATION OF RUBISCO.

The purpose of this work is to characterize the enzymatic reactions used by the rubisco for carbon fixation. Further, we plan to determine the crystal structures for these enzymes in conjunction with their substrates. We propose to use the plant enzymes as back-ups in case there are troubles with solubility or crystallization.
Microbial Agents, Infectious Agents or Toxins
Biosafety Level
BSL 1
Risk Group
1
Section of the NIH Guidelines (if applicable)
Section III-D-2 Section III-E Section III-F-2 Section III-F-3

Score: 01
Committee Decision: 10 in favor, **0** opposed, and **0** abstention

IBC# 114: CHARACTERIZATION OF THE RIBOFLAVIN BIOSYNTHETIC PATHWAYS

The purpose of this work is to characterize the enzymatic reactions used by the endosymbiont Wolbachia in Brugia malayi to generate riboflavin needed for growth. Further, we plan to determine the crystal structures for these enzymes in conjunction with their substrates. We propose to use the E. coli enzymes as back-ups in case there are troubles with solubility or crystallization. With further writing and more thought, we are proposing some tricky crystallographic experiments. It will be best if we have a variety of crystals to try, so we would like to also use proteins for which there are structures in the PDB. We propose to use the Helicobacter pylori sequence for RibA. We propose to use the Vibrio cholerae, Salmonella enterica, and Yersinia pestis sequences for RibB.
Microbial Agents, Infectious Agents or Toxins
Biosafety Level
BSL 1
Risk Group
1
Section of the NIH Guidelines (if applicable)
Section III-D-2 Section III-E Section III-F-2 Section III-F-3

Score: 1
Committee Decision: **10** in favor, **0** opposed, and **0** abstention

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IBC# 117: GENERATION OF DEUTERATED CHORISMATE AND ISOCHORISMATE USING AN IN VITRO SHIKIMATE PATHWAY

The purpose of this work is to determine whether the Pseudomonas aeruginosa enzyme PchB utilizes a pericyclic or an acid-base reaction mechanism when it catalyzes the conversion of isochorismate to salicylate. To conduct experiments that differentiate between the two reaction mechanisms we need to generate deuterated chorismate and isochorismate. We plan to produce these deuterated substrates by reconstituting a portion of the shikimate pathway in vitro.
Microbial Agents, Infectious Agents or Toxins
Biosafety Level
BSL 1
Risk Group
1
Section of the NIH Guidelines (if applicable)
Section III-D-2 Section III-E Section III-F-2 Section III-F-3

Score: 1
Committee Decision: **10** in favor, **0** opposed, and **0** abstention

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IBC# 118: PYOCHELIN, PYOVERDIN AND RELATED SIDEROPHORES

The purpose of this work is to characterize the enzymatic reactions used by Pseudomonas aeruginosa to generate small molecule metallophores able to capture metals from the environment. Further, we plan to determine the crystal structures for these enzymes in conjunction with their substrates.
Microbial Agents, Infectious Agents or Toxins
Biosafety Level
BSL 1
Risk Group
1
Section of the NIH Guidelines (if applicable)
Section III-D-2 Section III-E Section III-F-2 Section III-F-3

Score: 1
Committee Decision: 10 in favor, 0 opposed, and 0 abstention

IBC# 119: CHARACTERIZATION OF AN OPINE BIOSYNTHETIC PATHWAYS INVOLVED IN METALLOPHORE PRODUCTION.

The purpose of this work is to characterize the enzymatic reactions used by Staphylococcus aureus, Yersenia pestis, Clostridium argentinense, Arthrobacter arilaitensis and Fusobacterium varium to generate a small molecule metallophore able to capture metals from the environment. Further, we plan to determine the crystal structures for these enzymes in conjunction with their substrates.
Microbial Agents, Infectious Agents or Toxins
Biosafety Level
BSL 1
Risk Group
1
Section of the NIH Guidelines (if applicable)
Section III-D-2 Section III-E Section III-F-2 Section III-F-3

Score: 1
Committee Decision: 10 in favor, 0 opposed, and 0 abstention

IBC# 120: ALLOSTERISM AND RHEOSTAT POSITIONS

We will be investigating pyruvate kinase, phosphofuctokinase, pyruvate carboxylase and aldolase, doing a structure-function analysis of variants believed to enlighten on regulation of allosterism and at rheostat sites. We will be using the human proteins, and the proteins from the bacteria Zymomonas mobilis.

Microbial Agents, Infectious Agents or Toxins
Biosafety Level
BSL 1
Risk Group
1
Section of the NIH Guidelines (if applicable)
Section III-D-2 Section III-E Section III-F-2 Section III-F-3

Score: 1
Committee Decision: **10** in favor, **0** opposed, and **0** abstention

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IBC# 121: DIRIGENT

We will be investigating an oxidase and a dirigent protein, doing a structure-function analysis of variants believed to enlighten on the mechanism of stereoselectivity by these proteins.
Microbial Agents, Infectious Agents or Toxins
Biosafety Level
BSL 1
Risk Group
1
Section of the NIH Guidelines (if applicable)
Section III-D-2 Section III-E Section III-F-2 Section III-F-3

Score: 1
Committee Decision: **10** in favor, **0** opposed, and **0** abstention

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IBC# 122: CHARACTERIZATION OF PLANT NICOTIANAMINE SYNTHASE ENZYMES INVOLVED IN METALLOPHORE PRODUCTION.

The purpose of this work is to characterize the enzymatic reactions used by Nicotiana tabacum (common tobacco), Zea mays (maize), and Hordeum vulgare (barley) to generate a small molecule metallophore able to capture metals from the environment. Further, we plan to determine the crystal structures for these enzymes in conjunction with their substrates.
Microbial Agents, Infectious Agents or Toxins
Biosafety Level
BSL 1
Risk Group
1

Section of the NIH Guidelines (if applicable)
Section III-D-2
Section III-E
Section III-F-2
Section III-F-3

Score: 1
Committee Decision: 10 in favor, 0 opposed, and 0 abstention

IBC# 123: STRUCTURE DETERMINATION OF A HISTIDINE KINASE ENZYME INVOLVED IN FLAGELLAR PRODUCTION IN VIBRIO CHOLERA.

The purpose of this work is to determine the crystal structure of a histidine kinase involved in flagellar production in Vibrio cholera in collaboration with [redacted] from the Biology Department at UTSA.
Microbial Agents, Infectious Agents or Toxins
Biosafety Level
BSL 1
Risk Group
1
Section of the NIH Guidelines (if applicable)
Section III-D-2
Section III-E
Section III-F-2
Section III-F-3

Score: 1
Committee Decision: 10 in favor, 0 opposed, and 0 abstention

IBC# 124: STRUCTURE DETERMINATION OF HYPOXANTHINE (GUANINE) PHOSPHORIBOSYL-TRANSFERASE ENZYMES INVOLVED IN SLEEPING SICKNESS

The purpose of this work is to determine the crystal structures of several hypoxanthine-guanine phosphoribosyl-transferase and hypoxanthine-guanine-xanthine phosphoribosyl-transferase enzymes containing inhibitors. These enzymes are involved in a variety of diseases including sleeping sickness and Chagas's disease. This work is in collaboration with [redacted]
Microbial Agents, Infectious Agents or Toxins
Biosafety Level
BSL 1
Risk Group
1
Section of the NIH Guidelines (if applicable)
Section III-D-2
Section III-E
Section III-F-2

Section III-F-3

Score: 1
Committee Decision: 10 in favor, **0** opposed, and **0** abstention

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IBC# 125: STRUCTURE DETERMINATION OF CYSTEINE PROTEASE ENZYMES INVOLVED IN A VARIETY OF DISEASES INCLUDING COVID-19 AND CANCER

We will be investigating an oxidase and a dirigent protein, doing a structure-function analysis of variants believed to enlighten on the mechanism of stereoselectivity by these proteins.
Microbial Agents, Infectious Agents or Toxins
Biosafety Level
BSL 1
Risk Group
1
Section of the NIH Guidelines (if applicable)
Section III-D-2 Section III-E Section III-F-2 Section III-F-3

Score: 1
Committee Decision: 10 in favor, **0** opposed, and **0** abstention

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IBC# 126: STRUCTURE DETERMINATION OF A D-ALA-D-ALA LIGASE INVOLVED IN PEPTIDOGLYCAN PRODUCTION IN MYCOBACTERIUM TUBERCULOSIS.

The purpose of this work is to determine the inhibitor bound crystal structure of D-Ala-D-Ala ligase, a key building block of peptidoglycan biosynthesis in Mycobacterium tuberculosis. This work is in collaboration with [redacted]
Microbial Agents, Infectious Agents or Toxins
Biosafety Level
BSL 1
Risk Group
1
Section of the NIH Guidelines (if applicable)
Section III-D-2 Section III-E Section III-F-2 Section III-F-3

Score: 1
Committee Decision: 10 in favor, **0** opposed, and **0** abstention

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III. REVIEW OF AMENDMENTS

S/N	Lab Name	PI	Amendments for	Reviewer comments	Decision

IV. ADMINISTRATIVE APPROVAL

S/N	Lab Name	PI	Amendments for	Reviewer comments	Decision

V. EXPIRED / CLOSED PROTOCOLS

None at this time

VI. NEW BUSINESS

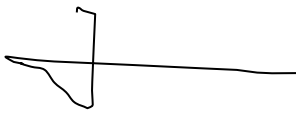
A. Update from BSO.

- **MBT BSL3 shutdown-Reopen on December 4th 2024**

B. Open Business:

VII. ADJOURN

The meeting was adjourned at 09:20 AM. Next meeting will take place on Wednesday, March 5th 2025 at 9.00 AM via Teams.



Jose Lopez-Ribot, IBC Chair