Potentially Hazardous Biological Agents Risk Assessment Form (6A)

Required for research involving microorganisms, rDNA, fresh/frozen tissue (including primary cell lines, human and other primate established cell lines and tissue cultures), blood, blood products and body fluids. SRC/IACUC/IBC approval required before experimentation.

Student's Name(s) Vyom Shah

Title of Project Linking Diet and Cancer: Arachidonic Acid Augments Canonical Wnt Signaling to Enhance Stemness

To be completed by the QUALIFIED SCIENTIST/DESIGNATED SUPERVISOR in collaboration with the student researcher(s). All questions are applicable and must be answered; additional page(s) may be attached.

SECTION 1: PROJECT ASSESSMENT

1. Identify potentially hazardous biological agents to be used in this experiment. Include the source, quantity and the biosafety level risk group of each microorganism.
   see attached
2. Describe the site of experimentation including the level of biological containment.
   see attached
3. Describe the procedures that will be used to minimize risk (personal protective equipment, hood type, etc.).
   see attached
4. What final biosafety level do you recommend for this project given the risk assessment you conducted?
   see attached
5. Describe the method of disposal of all cultured materials and other potentially hazardous biological agents.
   see attached

SECTION 2: TRAINING

1. What training will the student receive for this project?
   see attached
2. Experience/training of Designated Supervisor as it relates to the student's area of research (if applicable).
   see attached

SECTION 3: For ALL CELL LINES, MICROORGANISMS AND TISSUES – To be completed by the QUALIFIED SCIENTIST or DESIGNATED SUPERVISOR - Check the appropriate box(es) below:

☐ Experimentation on the microorganisms/cell lines/tissues to be used in this study will NOT be conducted at a Regulated Research Institution, but will be conducted at a (check one) ☐ BSL-1 or ☐ BSL-2 laboratory. This study has been reviewed by the local SRC and the procedures have been approved prior to experimentation.

■ Experimentation on the microorganisms/cell lines/tissues to be used in this study will be conducted at a Regulated Research Institution and was approved by the appropriate institutional board prior to experimentation; institutional approval forms are attached.
Origin of cell lines: Black6 Mouse Intestine Date of IACUC/IBC approval 6/7/2019

☐ Experimentation on the microorganisms/cell lines/tissues to be used in this study will be conducted at a Regulated Research Institution, which does not require pre-approval for this type of study. The SRC has reviewed that the student received appropriate training and the project complies with ISEF rules.

CERTIFICATION – To be SIGNED by the QUALIFIED SCIENTIST or DESIGNATED SUPERVISOR

The QS/DS has seen this project's research plan and supporting documentation and acknowledges the accuracy of the information provided above. This study has been approved as a (check one) ☐ BSL-1/ ☑ BSL-2 study, and will be conducted in an appropriate laboratory.

Semir Beyaz
QS/DS Printed Name

Signature

12/3/2019
Date of review (mm/dd/yy)

SECTION 4: CERTIFICATION – To be completed by the LOCAL or AFFILIATED FAIR SRC

The SRC has seen this project's research plan and supporting documentation and acknowledges the accuracy of the information provided above.

Hannah Verena Meyer
SRC Printed Name

H. Meyer
Signature

12/5/2019
Date of review (mm/dd/yy)

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Section 1

1. Intestinal epithelial organoids. Due to the use of a primary cell culture, this study is valued at a containment level of BSL2 [1]. Organoids were gifted from the Beyaz laboratory and originally harvested from the intestines of wildtype C57 black 6 mice. Organoids were cultured to fill six 24-well plates (Corning CLS3526).
2. All experimentation was conducted under a sterilized BSL 2 biosafety cabinet in order to reduce contamination. Prior to the introduction of new equipment to experimentation environment, items were thoroughly sterilized using a 70% ethanol solution. Protective equipment was worn.[2]
3. Wash skin thoroughly after handling cells. Do not eat, drink or smoke when working with cells. Wear protective gloves/ protective clothing/ eye protection/ face protection during experimentation, long sleeves and pants are necessary. If swallowed contact poison control and rinse mouth. All experimentation was conducted under a BSL 2 biosafety cabinet.[2]
4. This experiment would be valued as BSL2 due to the use of primary cell cultures [1]
5. Prior to cell culture disposal treat with 10000ppm of hypochlorite for 2 hours. Plates were then placed in biohazard disposal bins while awaiting biosafety pickup.

Section 2

1. The student will receive standard biosafety training and lab ethics as per new employee CSHL guidelines. Specifically, conventional organoid culturing techniques were demonstrated to the student by qualified scientists.
2. Qualified scientist received PhD from Harvard University in 2017. During training, qualified scientist directly supervised student while uncovering the role of a high fat diet on tumorigenesis

References

[1] D. Stearns-Kurosawa, "Boston University Institutional Biosafety Committee (IBC) Meeting Minutes," 14-Nov-2017. [Online]. Available: https://www.bu.edu/researchsupport/files/2016/08/November-2017-IBC-Meeting-Minutes-WEB.pdf. [Accessed: 26-Nov-2019].

[2] M. Huch and B.-K. Koo, "Modeling mouse and human development using organoid cultures," Development, vol. 142, no. 18, pp. 3113–3125, 2015.