

INDEPENDENT STUDY PROJECT PROPOSAL
BOT 299
Course Outline

Student: Lia Kim
Advisor: Ingelia White Ph.D. and Hongwei Li Ph.D.
Date: Fall 2016
Title: Anti-inflammatory, Antiviral, and Anticancer Studies on *Tradescantia Zebrina*

COURSE DESCRIPTION:

See description of Independent Study in the catalog. This research involves two capstone disciplines of CA Agripharmatech (Ethnopharmacognosy, and Plant Biotechnology).

COURSE OBJECTIVE:

Various concentrations of *Tradescantia zebrina* methanolic extract will be tested on U939, a model cell line used to study the differentiation of monocytes, to evaluate the level of gene expression involved in inflammatory response. Influenza virus A/PR/8/34 H₁N₁ as well as the Dengue virus will be tested for *T. zebrina's* anti-viral characteristics. Anti-cancer properties will be tested using AD293, a human kidney cancer cell line. ELISA and real-time PCR will be used to detect the total RNA and desired genes involved in inflammatory response, viral replication, and cancer cell proliferation. In addition, antibacterial and antioxidant activities of *T. zebrina* will also be investigated at a smaller scale to confirm previous research results.

METHOD OF INSTRUCTION:

Under the mentorship of Dr. Ingelia White and Dr. Hongwei Li, the student conducts a follow-up laboratory research in anti-inflammatory, antioxidant and anticancer properties of *Tradescantia zebrina* methanolic extract. The student will produce a research paper, and poster for BRIN Student Poster Presentation and provide a Power Point presentation in BOT 205 class in Fall 2016. Student's stipend is paid through USDA-NIFA grant.

EVALUATION OF OBJECTIVE ACHIEVEMENT:

A satisfactory outcome is demonstrated by a completion of the laboratory performance, Observation, data collection, and submit a research paper, prepare a poster, and provide a class presentation. The assignment of points is as follows:

Lab performance/Discussion	100 points
Observation/Data collection	100 points
Research paper	100 points
Poster	100 points
Class presentation	100 points
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Total	500 points

METHOD OF GRADING:

A letter grade (A – F) will be awarded. A research paper should be submitted to Dr. Li no later than December 15. Letter grades will be assigned based upon the percentage of total points as follows:

- A** 90% or above of the total possible points
- B** 80-89% of the total possible points
- C** 65-79% of the total possible points
- D** 55-64% of the total possible points
- F** Below 55% of total points; or informal or incomplete official withdrawal from the course.

PREREQUISITE:

MICRO 130, MICRO 140, BIOL 275/275L or BOT 210, and BOT 205

SUGGESTED READING:

Akindele, A., Wani, Z., Sharma, S., Mahajan, G., Satti, N., & Adeyemi, O. et al. (2015). In Vitro and In Vivo Anticancer Activity of Root Extracts of *Sansevieria liberica* Gerome and Labroy (Agavaceae). *Evidence-Based Complementary And Alternative Medicine*, 2015, 1-11. <http://dx.doi.org/10.1155/2015/560404>

Alaba, C. & Chichioco-Hernandez, C. (2014). 15-Lipoxygenase inhibition of *Commelina benghalensis*, *Tradescantia fluminensis*, *Tradescantia zebrina*. *Asian Pacific Journal Of Tropical Biomedicine*, 4(3), 184-188. [http://dx.doi.org/10.1016/s2221-1691\(14\)60229-x](http://dx.doi.org/10.1016/s2221-1691(14)60229-x)

Alonso-Castro, A., Villarreal, M., Salazar-Olivo, L., Gomez-Sanchez, M., Dominguez, F., & Garcia-Carranca, A. (2011). Mexican medicinal plants used for cancer treatment: Pharmacological, phytochemical and ethnobotanical studies. *Journal Of Ethnopharmacology*, 133(3), 945-972. <http://dx.doi.org/10.1016/j.jep.2010.11.055>

WINDWARD COMMUNITY COLLEGE INDEPENDENT STUDY PROJECT PROPOSAL FORM

(Refer to current WCC Catalog for registration deadline)

(Please type or print clearly in black or blue ink)

Student's Name: Kim Lia ID #: 2450-7583
Last First MI

Mailing Address: 54-230 Kamehameha Highway
Street

Hauula HI 96717 Phone No.: 8088592343
City State Zip Code

Degree Objective: CA Agripharmatech Major: _____

General Project Information

BOT 99V 199V 299V No. of Credits: 1 (1 - 4) Grading Method: A-F CR-NC
Discipline

Start date: 08 / 22 / 2016 End date: 12 / 16 / 16 This project/study is an extension of:
BOT 205 & 210
Course Number

Project Advisor: Inge White & Hongwei Li Contact Info: ingelia@hawaii.ed

Title of Project (20 characters max):

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To be filled out by Vice Chancellor of Instruction's Office:

Course Alpha: BOT 299V
 CRN: 63608
 Semester (Check One): Fall Spring Summer
 Year: 2016

If no course exists, please give reasons why the project should be approved.

Required Signatures

Student:  Date 10/05/2016

Project Advisor:  Date 10/5/16

Dept. Chair:  Approved Disapproved Date OCT 6 2016

Dean or Vice Chancellor of Instruction:  Approved Disapproved Date OCT 6 2016