

Tatiana Riera

786-660-5340 | www.linkedin.com/in/tatianariera98 | tatianariera98@gmail.com

EDUCATION

Georgia Institute of Technology, Atlanta, GA
B.S. Biology | Concentration: Integrative Biology

December 2022

PUBLICATIONS

- Deutsch, J. M., Green, M. O., Akavaram, P., Davies, A. C., Diskalkar, S. S., Du Plessis, I. A., **Riera, T**; Agarwal, V, et al. (2023), Limited metabolomic overlap between commensal bacteria and marine sponge holobiont revealed by large scale culturing and mass spectrometry-based metabolomics: an undergraduate laboratory pedagogical effort at Georgia Tech. *Marine Drugs*, <https://doi.org/10.3390/md21010053>

EXPERIENCE/PROJECTS

Dr. Vinayak Agarwal Lab

Undergraduate Student Research Assistant

Atlanta, Georgia

August 2022 - December 2022

*Isolation of bacteria from *S. aurea* for microbiological studies of natural products.*

- Isolated colonies from *Smenospongia aurea* to further study metabolomics of different bacterial strains
- Purified cultures obtained to extract DNA of each colony and conserved them in cryostock preservation for *National Agricultural Library* database
- Created molecular network made from natural compounds of all colonies according to the chemistry of each
- Examined the M1 and M2 data of each product through software such as MZmine to complete network data
- Compared 16S Sanger Sequencing results to metabolomes from animal holobiont to create a bacterial phylogeny
- Wrote extensive reports about the processes done in the lab as well as a poster to present in a college conference.

Cell and Molecular Biology Lab

Undergraduate Student Research Assistant

Atlanta, Georgia

January 2022 - May 2022

Study of macrophage inflammatory response and Tempol properties to apply to inflammatory diseases.

- Prepared and collected both treated and untreated *J774A.1* cells with different amounts of *Tempol* to perform Griess and Propidium assays and compare nitrite production and cell viability between groups
- Performed both fluorescence microscopy and flow cytometry on all groups of cells to visualize macrophage activation and its effects on complexity and fluorescence of different cell treatments
- Extracted RNA and created total cDNA through reverse transcription with target cDNA being IL-6, MMP9, iNOS, and B2M to further study macrophage activation
- Analyzed gene expression through qPCR and performed statistical reviews to check each transcript of interest.
- Performed in-depth clinical literature searches to further understand the impact of previous Tempol applications.

Genetics Laboratory

Undergraduate Student Research Assistant

Atlanta, Georgia

August 2021 – December 2021

Development of new proteins and color variants from gene that encodes RFP.

- Executed plasmid extraction and purification to begin random mutagenic polymerase chain reaction (PCR) on *RFP* gene
- Prepared mutagenized *mRFP1* gene copies created from PCR for ligation reactions and visualized results through gel electrophoresis
- Transformed competent *E. coli* cells with previously created recombinant DNA plasmids to compare fluorescent protein expression between original and mutated *RFP* genes
- Amplified new *RFP* genes through colony PCR and prepared both fluorescence assays and gel electrophoresis to characterize differences between original and mutagenized genes
- Interpreted 16S Sanger Sequencing results and identified mutations possibly responsible for fluorescence shifts

EXTRACURRICULAR INVOLVEMENT

- Society of Hispanic Professional Engineers, *member* (August 2017 – August 2022)
- MUN, *press editor* (January 2014 – December 2016)

SKILLS

Languages: Spanish (Fluent), French (Proficiency)

Technical Skills: Microsoft Office Suite, MATLAB, R Studio, Pymol, SnapGene, MZmine, Cytoscape, JMP, Cyflogic

Laboratory Instrumentation: Flow Cytometer, Gel Electrophoresis, PCR, Assays, Fluid microscopes

Non-technical Skills: Teamwork, Creative Thinking, Critical Thinking, Communication skills, Detail-Oriented, Fast-learner, Strong Writing Experience, Report/Article/Scientific Writing. Medical Terminology. GCP.