Volume 13
Washington University Undergraduate Research Digest

Spring 2018

Ribosomal RNA-Processing Protein:How Does It Affect the Growth of Plasmodium Falciparum?

Yolotzin Avila-Cruz
Washington University in St. Louis

Ribosomal RNA-Processing Protein: How Does It Affect the Growth of *Plasmodium falciparum*?

Yolotzin Avila-Cruz

Mentor: Eva Istvan

Malaria continues to be a ravaging disease that approximately half the world is at risk of and it mainly affects children under the age of five. Currently, there is no cure for malaria, but drugs and a vaccine help combat the disease. Unfortunately, the parasites are developing resistance to drug therapies and the only approved vaccine shows at best a fifty percent efficiency. Understanding how the parasites thrive is crucial to developing effective therapies.

This research, which identifies genes essential for parasite survival, is a key prerequisite for the development of new and improved treatments for this disease. In our lab, we work with *Plasmodium falciparum*—the most multidrug-resistant parasite of malaria. Our focus is to understand whether an amplification on chromosome 10 is responsible for fast growth. To solve this, we have selected a protein-coding gene, RPP, from that chromosome to monitor its growth against a normal growing parasite. If we find that the parasites with the gene do indeed grow at a faster pace than the normal ones then we will have identified a new target for drugs for our fight against malaria, a disease that has shaped—and will likely continue to shape—human evolution.