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Anthelminthic Screening for Parasitic Nematodes

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Et al.

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For many parasitic diseases, high-throughput phenotypic screening is an important tool in finding new drugs. Some of the most important parasitic diseases are caused by nematodes. However, these parasitic nematodes are not typically amenable to high throughput screening. Due to the ease of its maintenance and suitability for high throughput assay, the nematode *Caenorhabditis elegans* is instead used. To address whether *C. elegans* is a good model for nematode drug discovery, we compared the drug susceptibility of *C. elegans* relative to the human hookworm nematode parasite *Ancylostoma ceylanicum* at several developmental stages using a library of FDA approved drugs. I will present results of these studies that point to how well *C. elegans* efficacy correlates with hookworm efficacy and how early larval stages (easier to get) correlated with adult stages (more representative of what stage is targeted in human therapy). In addition, we are working on moderate-high throughput system for screening adult parasites. Murine *Holigmosomoides polygyrus* is a good model for human parasitic nematodes. Using Union Biometrica, Copas, worm sorter we were able to sort *H. polygyrus* into 384 well format. Here I will discuss the capabilities of this system as well as how we are building de novo, in collaboration with the Albrecht laboratory at WPI, an imaging and image analysis platform for screening adult stages of this parasite against large drug libraries.

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