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THE RACE AGAINST **DRUG RESISTANCE**

FOCUS: Novel therapeutics to treat malaria.

Malaria is a major global health issue, a disease particularly dangerous to pregnant woman and young children, causing over 200 million clinical episodes and 500,000 deaths annually.

“Parasites have developed resistance to all frontline antimalarial drugs,” Dr. Yeh says. “If we wait until resistance to antimalarial drugs has spread more widely before developing effective compounds, countless more people will be afflicted. Another critical factor is that development of therapeutics for the developing world is hampered by a relative lack of commercial pharmaceutical incentive.”

A promising drug target that has been proven in mouse malaria models is the enzyme PfFPPS/GGPPS, which has an important function in parasite metabolism. “Parasites are a single cell, and we have found

that inhibiting PfFPPS/GGPPS removes a basic building block of the cell, so that it can't survive,” Dr. Yeh says. “Once we block this enzyme, the cell can't grow, can't make new parasites, and it dies.”

PfFPPS/GGPPS as a target is not new, but compared to previous compounds, Dr. Yeh and her lab have developed one that is able to specify between a malaria enzyme and a human enzyme, as well as having improved drug qualities. In addition, their compound could be taken orally, a vastly simpler and faster treatment regimen than what currently exists.

By studying plasmodium biology, Dr. Yeh's work offers the potential to have an important global health impact, as well as improving the economic incentives for drug development.

“Harrington's industry expertise has been instrumental in helping us navigate the drug discovery pipeline with pharmaceutical partners.”

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