

Hesperos Awarded NIH Phase II Grant to Advance Malaria-on-a-Chip Platform for Novel Therapeutics

Orlando, Florida — 22 October 2026 — Hesperos, Inc., a global leader focused on improving preclinical drug development with its Human-on-a-Chip® (HoaC) single- and multi-organ system platforms, today announced it was awarded a Small Business Innovation Research (SBIR) Phase II grant from the National Institute of Allergy and Infectious Diseases (NIAID). The grant funding will enable Hesperos to expand upon its phenotypic Malaria-on-a-Chip model, enhancing its physiological relevance to provide an advanced, human-based preclinical platform for novel therapeutic development.

Background

Malaria remains a major global public health crisis. According to the most recent World Health Organization report, there were >280 million cases of and ~610,000 deaths in 2025 due to malaria in 2024.¹

What is Being Done

Current preclinical testing options suffer from severe translational limitations. Likewise, controlled human malaria infection (CHMI) clinical studies rely on weakened, non-replicating strains that fail to fully replicate the clinical disease process. Hesperos' Malaria-on-a-Chip platform helps bridge this critical translational gap.

Building on prior work, published in *Nature Scientific Reports* and *Advanced Science*, conducted by James J. Hickman, PhD and his team, established a human-based platform that reproduced the parasite lifecycle and its response to three known antimalarial therapeutics, offering a highly predictive and translatable alternative to current animal models.²

Under this new NIAID award, Hesperos will enhance the Malaria-on-a-Chip system to monitor infected erythrocyte sequestration and parasite-induced immune responses. Researchers will chronically evaluate parasite clearance and organ toxicity in response to sequential dosing regimens and combination therapies. Crucially, the platform accommodates viable, replicating parasite strains, enabling real-time tracking of replication rates, organ parasite burden, and parasite recrudescence, metrics that cannot be observed in CHMI studies. This research will also establish a novel therapeutic delivery method and a predictive pharmacokinetic/pharmacodynamic (PK/PD) model to translate in vitro results into in vivo outcomes, delivering a cost-effective and highly predictive and translatable methodology.

References:

More details about the global impact of malaria and the previous research conducted by Hesperos can be found:

- *World Malaria Report 2025: Addressing the Threat of Antimalarial Drug Resistance*. World Health Organization; 2025. Accessed October 12, 2026. <https://www.who.int/publications/i/item/9789240117822>¹

- Rupar MJ, Sasserath T, Hickman JJ, et al. Development of a human malaria-on-a-chip disease model for drug efficacy and off-target toxicity evaluation. *Sci Rep.* 2023;13:10509. doi:10.1038/s41598-023-35694-4²
- Rupar MJ, Hanson HM, Hickman JJ, et al. Translation of a human-based malaria-on-a-chip phenotypic disease model for *in vivo* applications. *Adv Sci.* 2025;12(38):2505206. doi:10.1002/advs.202505206³

About Hesperos

Hesperos is a global contract research organization (CRO) specializing in preclinical drug development services utilizing its Human-on-a-Chip® platform. By replicating key aspects of human biology (and thus avoiding expensive, time-consuming, and often less informative animal testing), Human-on-a-Chip® organ-system models provide product development teams with more meaningful insights that can accurately predict an agent's therapeutic profile while lowering costs and accelerating development timelines. For more information, visit: <https://hesperosinc.com>.

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