Fight Neglected Diseases through Partnerships

GHIT Fund

Global Health Innovative Technology Fund

Appendix 1. Project Details

ID: G2025-112

Project Title	Development of a highly efficacious multistage mRNA vaccine formulation to prevent *P. vivax* infection and transmission
Collaboration Partners	1. Mahidol University (Thailand) 2. Ehime University (Japan) 3. Chulalongkorn University (Thailand)
Disease	Malaria
Intervention	Vaccines
Stage	Lead Optimization
Awarded Amount	JPY 648,081,450 (USD 4.1 million)
Status	Continued project
Summary	[Project objective] This project aims to develop a multistage mRNA vaccine capable of reducing both infection and transmission of *P. vivax* [Project design] Researchers from Mahidol, Chulalongkorn, and Ehime Universities are teaming up to develop a new mRNA vaccine that can both prevent infection and stop the spread of *P. vivax*. The vaccine will target two key proteins: *PvCSP*, which is involved in the early stages of infection, and *Pvs230*, which helps the parasite spread from humans to mosquitoes. The team will first test different versions of the *PvCSP* mRNA to find the most promising one, then fine-tune the best combination of *PvCSP* and *Pvs230*. Promising vaccine formulas will be tested in non-human primates to identify the most effective option. Once a lead candidate is selected, they will produce a high-quality vaccine suitable for human trials. All vaccine versions will use a clinically proven lipid nanoparticle (LNP) system to deliver the mRNA. Success will be evaluated by the vaccine's ability to generate antibodies that block the parasite from infecting liver cells and prevent its transmission to mosquitoes.
Project Detail	https://www.ghitfund.org/investment/portfoliodetail/detail/251/en

ID: G2025-121

Project Title	*Trypanosoma cruzi*-LAMP: A molecular point-of-care test for the control of congenital Chagas disease – from prototype to product
Collaboration Partners	1. Barcelona Institute for Global Health (ISGlobal/Spain) 2. Eiken Chemical Co., Ltd. (EIKEN/Japan) 3. Consejo Nacional de Investigaciones Científicas y Técnicas- Instituto de Investigaciones en Ingeniería Genética y Biología Molecular "Dr. Héctor N. Torres" (CONICET-INGEBI/Argentina) 4. Fundación Salud Naturaleza Integral (SANIT/Bolivia) 5. Wiener lab (WIENER/Argentina)
Disease	Chagas disease
Intervention	Diagnostic

Stage	Registration
Awarded Amount	JPY 93,142,925 (USD 0.6 million)
Status	Continued project
Summary	[Project objective] To license the *T. cruzi*-LAMP in Argentina and Bolivia, respectively in front of ANMAT and AGEMED regulatory agencies. Additionally, both industrial partners involved (EIKEN and WIENER) will reach a Memorandum of Understanding (MOU) that provides the context for the subsequent commercialization of the technology. At the same time, we will promote the use of the LAMP for improved diagnosis of congenital Chagas disease. Enabling the adoption of this tool will increase access, aligning to the WHO 2030 roadmap for Neglected Tropical Diseases, and contributing to the PAHO Elimination of Mother-To-Child Transmission (EMTCT) of infections initiative. [Project design] In G2025-121, coordinated again by ISGlobal, we will extend the data of former project G2020-203 on the use of heparinized and dried blood spots (DBS) newborns samples in the study site of Yacuiba (Gran Chaco province, department of Tarija, Bolivia) operated by SANIT. These new data will complement the existing body of evidence, including prior analytical performance results generated by Eiken and CONICET-INGEBI, as well as the G2020–2023 clinical validation studies. In addition, performance data produced by Wiener using the *T. cruzi*-LAMP kits assembled at its manufacturing facility in Argentina will be incorporated. Together, this comprehensive dataset will underpin the preparation of the regulatory dossier and facilitate formal interactions with ANMAT and AGEMED, advancing the licensing and market authorization of the *T. cruzi*-LAMP diagnostic prototype in Argentina and Bolivia. The newly generated results will play a key role to respond the regulatory agencies requests, which include the analytical validation work conducted within the *T. cruzi*-LAMP verification studies led by Wiener. Moreover, with the goal of recommending a change in the diagnosis policy to generalize a timely access to diagnosis (and treatment), we will advocate towards the adoptability of the technology through regular meetings with the competent health care authorities at both regional and national levels, as well as internationally to the PAHO and WHO.
Project Detail	https://www.ghitfund.org/investment/portfoliodetail/detail/256/en

ID: H2025-101

Project Title	Hit-to-Lead Optimization of Phosphodiesterase Inhibitors for the Treatment of Chagas Disease
Collaboration Partners	1. Eisai Co., Ltd. (Japan) 2. Drugs for Neglected Diseases initiatives (DNDi/Switzerland) 3. Universidad Nacional de La Plata (UNLP/Argentina) 4. Fundación Instituto de Investigaciones en Ingeniería Genética y Biología Molecular (Fundación INGEBI/Argentina) 5. Instituto de Investigaciones en Microbiología y Parasitología Médica (IMPaM/Argentina)
Disease	Chagas disease

Intervention	Drug
Stage	Lead Identification
Awarded Amount	JPY 183,021,439 (USD 1.1 million)
Status	Continued project
Summary	[Project objective] We propose to conduct a hit-to-lead campaign of phosphodiesterase (PDE) inhibitors for Chagas disease. We will leverage findings from a previous GHIT-funded project for the generation of structure-activity relationship (SAR) data to advance a medicinal chemistry campaign. We aim to identify compounds with favorable profiles and *in vivo* efficacy using an acute model of Chagas disease. This work represents a crucial contribution to the drug discovery pipeline as the endpoint for this proposal is the identification of leads that are primed for further optimization, bringing us closer to delivering an urgently needed, novel mechanism-of-action drug candidate for Chagas disease. [Project design] New compounds will be subjected to iterative cycles of design, synthesis, and profiling in *in vitro* potency, selectivity, and DMPK assays, followed by *in vivo* PK studies. Structure-activity and structure-property relationships gleaned from these activities will be used to continually refine our analog design hypotheses. Potent analogs with acceptable *in vitro* and *in vivo* profiles will be progressed for *in vivo* efficacy testing using the Chagas acute model.
Project Detail	https://www.ghitfund.org/investment/portfoliodetail/detail/252/en

ID: G2024-105

Project Title	Facilitating Local Universal TB Testing with Lung Flute ECO (FLUTTE): Validation in Children, Health Care Workers, and People Living with HIV(PLHIV) with Robust Comparators
Collaboration Partners	1. The Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association (RIT-JATA/Japan) 2. Acoustic Innovations Co., Ltd (Japan) 3. Institute of Tropical Medicine (ITM/Belgium) 4. The Aurum Institute (Republic of South Africa and Republic of Mozambique) 5. Stellenbosch University (Republic of South Africa) 6. Instituto Nacional de Saúde (INS/Republic of Mozambique) 7. World Alliance for Lung and Intensive Care Medicine in Uganda (WALIMU/Republic of Uganda)
Disease	Tuberculosis
Intervention	Diagnostics
Stage	Product Validation
Awarded Amount	JPY 281,985,836 (USD 1.8 million)
Status	Continued project

Summary	[Project objective] The goal is to generate robust scientific evidence for WHO endorsement of the Lung Flute ECO by 2027. The project will assess LFE performance in: 1. Targeted Universal TB Testing (TUTT) among health-care workers and PLHIV unable to expectorate. 2. Paediatric TB diagnosis comparing LFE with saline induction, nasopharyngeal aspirates, and tongue swabs; and 3. Community screening combined with digital chest X-ray and computer-aided detection (CAD). The project also aims to establish sustainable local manufacturing in Africa and Asia. [Project design] A network of clinical trials in South Africa, Mozambique, and Uganda will enroll over 8,000 participants using randomized or crossover designs with molecular and culture-based TB diagnostics as references. Data on diagnostic yield, safety, acceptability, and cost-effectiveness will be harmonized for pooled analysis to meet WHO guideline review criteria. Parallel activities include technology transfer, manufacturer training, and market-entry preparation for LMICs.
Project Detail	https://www.ghitfund.org/investment/portfoliodetail/detail/253/en

ID: T2025-157

Project Title	Development of a novel *P. falciparum* multistage vaccine candidate based on *Pf*CSP and *Pf*Ripr5
Collaboration Partners	1. PATH (USA) 2. Ehime University (Japan) 3. Sumitomo Pharma Co., Ltd. (Japan) 4. Statens Serum Institut (SSI/Denmark) 5. University of Copenhagen (UCPH/Denmark)
Disease	Malaria
Intervention	Vaccine
Stage	Antigen Identification
Awarded Amount	JPY 99,989,845 (USD 0.6 million)
Status	New project
Summary	[Project objective] The objective of this project is to generate robust preclinical data to support the advancement of a multistage (CS + BS) particle-based malaria vaccine candidate formulated with a potent adjuvant. Under our central hypothesis, a vaccine targeting both pre-erythrocytic (CS) and erythrocytic (BS) stages will provide additive and/or synergistic protection against *P. falciparum* by interrupting two sequential lifecycle stages. This dual-targeting strategy is designed to reduce progression to clinical disease in individuals not achieving full protection with current CS-based vaccines (RTS,S/AS01, R21/Matrix-M). Milestones for this project include: 1. Generation and testing of potent CS and BS immunogens on a proven particle delivery platform in *in vivo* efficacy models.

	2. Testing admixed combinations of CS and BS particle-based immunogens in *in vivo* efficacy models. 3. Generation of a single particle displaying both CS and BS immunogens. [Project design] This project is built on the successful completion of the following activities: 1. A reliable system for preclinical efficacy testing of CS vaccine candidates; 2. Evidence that particle delivery is preferred for efficacy of CS immunogens; 3. Access to a robust, Phase 3 clinically validated particle delivery platform for preclinical and clinical testing; 4. Identification of a potent BS immunogen; 5. Down-selection of the most potent region of *Pf*Ripr; and 6. Access to potent TLR-7 agonist adjuvants. The project will be initiated by generating and evaluating potent CS and BS immunogens displayed on the clinically validated AP205 particle platform and assessing their functional efficacy *in vivo*. After completing the individual antigen testing, we will proceed to evaluate the admixed combination of CS and BS immunogens presented on AP205 particles *in vivo*. This phase will determine whether co-administration preserves—or even enhances—the immunogenicity of each antigen, will identify potential immune interference or synergistic effects, and will define the optimal CS to BS ratio to be administered. Once the admixed administration has been evaluated and ratios of CS to BS have been defined, a single, co-displayed particle that presents both CS and BS antigens on the AP205 platform will be constructed and characterized. This co-display approach on a single, easy-to-manufacture nanoparticle aligns with the project goal of simplified, cost-effective, multistage vaccine delivery.
Project Detail	https://www.ghitfund.org/investment/portfoliodetail/detail/254/en

ID: T2025-151

Project Title	AIH2L: Artificial Intelligence Guided Strategies to Identify New Anti-Schistosomal Hit to Lead Candidates.
Collaboration Partners	1. Aberystwyth University (UK) 2. BrightCore, Inc. (Japan) 3. University of Dundee (UK)
Disease	Schistosomiasis
Intervention	Drug
Stage	Target Identification
Awarded Amount	JPY 84,482,057 (USD 0.5 million)
Status	New project
Summary	[Project objective] The primary goal of this project is to deliver a small number of multi-lifecycle stage (schistosomula, juveniles and adults) active chemical series ready to enter the hit-to-lead phase of anti-schistosomal drug discovery. To achieve this goal, we will combine AI-guided approaches for drug discovery with high-throughput, whole-organism imaging platforms to phenotype schistosomes and expertise in early-stage drug discovery for

	schistosomiasis including medicinal chemistry and DMPK. The compounds developed here will be carried forward in subsequent projects as putative replacement drugs for praziquantel. [Project design] Using existing phenotypic datasets, AI models will first be built to identify chemical features associated with anti-schistosomal activity and run these trained models on large chemical libraries to identify new compounds predicted to display potential anti-schistosomal activity. Using high-throughput phenotyping platforms, approximately 100 of the prioritized compounds will first be co-cultured with *S. mansoni* schistosomula (10 µM final concentration) for 72 h. Active molecules will be subjected to dose response titrations and those displaying EC_{50}s less than 10 µM will subsequently be tested against 7-week adult male and female worms (20 µM final concentration) for 72 h. Actives will subsequently be tested in dose response titrations for EC_{50} determinations. Compounds with adult worm EC_{50}s less than 20 µM will subsequently be tested against 3-week juvenile worms in dose response assays. Compounds demonstrating EC_{50}s less than 10 µM in schistosomula, 20 µM in adult worms and 20 µM juvenile worms will be progressed as hits. Confirmed hits will be tested for cytotoxicity, metabolic stability, aqueous solubility and lipophilicity. Focused hit expansion plans for the most promising actives will aim to assess the potential to improve potency and DMPK profile, explore synthetic tractability and identify key areas for further optimization. Commercial analogs or, if available, analogs in our existing compound collection will also be tested. Series that meet Compound Progression Criteria for a Validated Hit Series will be screened against *S. mansoni* parasites during *ex vivo* co-culture. Compounds demonstrating EC_{50}s less than 3 µM in schistosomula, 3 µM in adult worms and 3 µM juvenile worms will be identified as H2L candidates.
Project Detail	https://www.ghitfund.org/investment/portfoliodetail/detail/255/en

*All amounts are listed at an exchange rate of USD 1 = JPY 156.53, the approximate exchange rate on December 30, 2025.