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**DEPARTMENT OF HEALTH AND HUMAN SERVICES**

**National Institutes of Health**

**Government-Owned Inventions; Availability for Licensing**

**AGENCY:** National Institutes of Health, HHS.

**ACTION:** Notice.

**SUMMARY:** The invention listed below is owned by an agency of the U.S. Government and is available for licensing to achieve expeditious commercialization of results of federally funded research and development. Foreign patent applications are filed on selected inventions to extend market coverage for companies and may also be available for licensing.

**FOR FURTHER INFORMATION CONTACT:** Licensing information may be obtained by communicating with the Technology Transfer and Intellectual Property Office, National Institute of Allergy and Infectious Diseases, 5601 Fishers Lane, Rockville, MD 20852 by contacting Chris Kornak at 240-627-3705 or at *chris.kornak@nih.gov*. A signed Confidential Disclosure Agreement will be required to receive copies of unpublished information related to the invention.

**SUPPLEMENTARY INFORMATION:** Technology description follows:

**A Novel Strategy to Produce 6-cys Proteins Based on Pfs230D1 Domain Fusions**

**Description of Technology:**

The Plasmodium parasite has a complex lifecycle during human infection and in the mosquito vector. Most advanced malaria vaccine candidates can confer only partial, short-term protection in malaria-endemic areas. A means of breaking the transmission of malaria to subsequent individuals could prevent a significant amount of human disease.

The primary embodiments of this technology are novel compositions of matter that produce enhanced transmission-blocking responses over current transmission blocking vaccines:

- The inventors designed fusion protein sequences incorporating Pfs230 domain1 (Pfs230D1) at the N-terminus with additional Plasmodium 6-cys domains downstream.
- The artificial immunogens retained structured transmission blocking epitopes.

This technology is available for licensing for commercial development in accordance with 35 U.S.C. 209 and 37 CFR part 404, as well as for further development and evaluation under a research collaboration.

**Potential Commercial Applications**

- This technology could be used alone or in combination with existing malaria vaccines.

**Competitive Advantages:**

- The immunogens were used in small animal vaccination studies where the Pfs230D1-Pfs48/45D3, Pfs230D1-Pfs230D9, Pfs230D1-3 fusions prompted greater functional serum activity compared to Pfs230D1 alone.
- Pfs230D1 or its ortholog Pvs230D1 enabled expression of other down stream domains of Pvs230 or Pv48/45D3 another malaria species that causes human disease.

**Developmental Stage:**

- Pre-clinical

**Inventors:** Dr. Patrick Duffy (NIAID) and Dr. Jonathan Renn (NIAID)

**Intellectual Property:** HHS Reference No. E-086-2023; Provisional Patent Application No.: 63/617,717, filed on January 4, 2024, and PCT Patent Application No. PCT/US2025/010325, filed on January 3, 2025.

**Licensing Contact:** To license this technology, please contact Chris Kornak 240-627-3705 or *chris.kornak@nih.gov,* and reference E-086-2023.

**Collaborative Research Opportunity:** The National Institute of Allergy and Infectious Diseases is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize this technology. For collaboration opportunities, please contact Chris Kornak 240-627-3705 or *chris.kornak@nih.gov,* and reference E-086-2023.

Dated: June 9, 2025.

**Surekha Vathyam,**

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