



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: Peter Tung at 240-669-5483 or peter.tung@nih.gov. 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: tel. 301-496-2644. A signed Confidential Disclosure Agreement will be required to receive copies of unpublished information related to the invention.

Licensing information and copies of the patent applications listed below 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 Peter Tung at 240-669-5483 or peter.tung@nih.gov. A signed Confidential Disclosure Agreement will be required to receive copies of unpublished patent applications related to the invention.

SUPPLEMENTARY INFORMATION: Technology description follows:

Enhanced Stability and Efficacy of Pfs48/45 Domain III Protein Variants for Malaria Vaccine Development Using SPEEDesign Technology.

Description of Technology:

The technology includes modifying the Plasmodium falciparum Pfs48/45 Domain III protein sequence to enhance its stability and efficacy to aid in malaria vaccine development. This approach successfully overcomes previous production challenges by increasing the thermostability of the antigen and eliminating the need for additional modifications that could impair vaccine effectiveness. Crucially, the technology maintains the essential neutralizing epitope of Pfs48/45, ensuring its effectiveness in preventing malaria transmission as a transmission-blocking vaccine. Developed using the SPEEDesign program, these novel protein variants show increased stability and a more robust transmission blocking response than wild-type proteins. The potential applications of this technology are providing a more stable and effective vaccine, potentially reducing the incidence of malaria and leading to improved health outcomes.

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 malaria vaccine technology offers competitive advantages by providing increased thermostability and enhanced immune response without the need for efficacy-reducing modifications, potentially revolutionizing malaria prevention with more effective and stable vaccine options.

Competitive Advantages:

- The development of more effective and stable malaria vaccines offers improved prevention strategies in regions affected by this disease and significantly contributing to global health initiatives.

Development Stage:

Pre-clinical

Inventors: Niraj Tolia, PhD., Thayne Dickey, PhD., all of NIAID.

Publications:

Intellectual Property: HHS Reference No. E-030-2023-0-US-01, US Provisional Application No. 63/476,897, filed on December 22, 2022; HHS Reference No. E-030-2023-0-PC-01, PCT Application No. PCT/US2023/085849, filed on December 22, 2023

Licensing Contact: To license this technology, please contact Peter Tung at 240-669-5483 or peter.tung@nih.gov, and reference E-030-2023.

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 Peter Tung at 240-669-5483 or peter.tung@nih.gov.

Date: March 14, 2024.

Surekha Vathyam,

Deputy Director,

Technology Transfer and Intellectual Property Office,

National Institute of Allergy and Infectious Diseases.

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