

TECH OFFER

A Novel Malaria Vaccine Candidate Targeting Plasmodium vivax



KEY INFORMATION

TECHNOLOGY CATEGORY:

Healthcare - Pharmaceuticals & Therapeutics

Life Sciences - Biotech Research Reagents & Tools

TECHNOLOGY READINESS LEVEL (TRL): **TRL4**

COUNTRY: **THAILAND**

ID NUMBER: **TO175026**

OVERVIEW

Malaria continues to be a significant challenge for public health, causing more than 200 million cases and approximately 500,000 deaths annually. In Southeast Asia and Oceania, the primary cause of malaria is the *Plasmodium vivax* parasite, which is transmitted through mosquitoes and infects red blood cells. Malaria arising from *P.vivax* transmission is responsible for 42% of all cases of outside Africa. To reduce the burden of this disease, it is crucial to have new tools that can effectively suppress its transmission.

This technology is of a novel vaccine candidate that demonstrates a higher level of efficacy in halting the transmission of *P. vivax* which unlike its previous counterparts, exhibits enhanced durability making it well-suited for eliciting community protection.

TECHNOLOGY FEATURES & SPECIFICATIONS

This technology is of a vaccine candidate for malaria created by employing the modern mRNA and lipid nanoparticle (LNP) platform that allows faster developmental turnaround time. Unlike previous vaccine candidates that were protein-subunit based, several other benefits of this technology, include higher specificity, lower immune rejection response, a large payload, simple production, and greater scalability.

POTENTIAL APPLICATIONS

The primary application of this technology is toward the prevention of *P. vivax* malaria by lowering the transmission rate of the parasite through mosquitoes.

MARKET TRENDS & OPPORTUNITIES

Malaria's prevalence in tropical nations has been a source of concern for the entire world, causing millions of fatalities during the last ten years. Vaccine development is an essential component of effective interventional control. In recent years, there has been a lot of study into new vaccine options. There is a global agenda to eradicate malaria. Understanding the biology of the deadly human malaria parasites *Plasmodium falciparum* and *Plasmodium vivax* is critical for expanding opportunities in the malaria vaccine industry. New options in the malaria vaccine business have opened up thanks to generations of pre-erythrocytic vaccinations. This has sparked a flurry of interest from biotech firms. RTS, S/AS01 (RTS,S) is the most thoroughly investigated vaccine option for *P. falciparum* malaria prophylaxis. However, it is important to note that *P. vivax* is the most widespread and the most difficult human malaria parasite to eliminate with 3.3 billion people at risk of infection.

Data Bridge Market Research analyses that the malaria vaccines market was valued at USD 1,852.38 million in 2021 and is expected to reach USD 18,913.86 million by 2029, registering a CAGR of 33.70% during the forecast period of 2022 to 2029.

UNIQUE VALUE PROPOSITION

This vaccine candidate can elicit

- stronger immune response
- stronger functional response to stop *P. vivax* transmission
- higher durability

compared to the previous generation vaccines that reached clinical trials.