Researchers at the University of South Florida have developed a next generation synthetic antigen based on the ligand domain of the Plasmodium vivax Duffy binding protein for use as a new vaccine against malaria.

Malaria is a widespread vector-borne disease that causes massive mortality and morbidity worldwide. With 207 million cases of malaria and 3.4 billion people at risk for malaria worldwide, the scientific community has been hard at work. Additionally, of the five malaria species to plague humans, Plasmodium vivax has the most widespread distribution.

P. vivax parasite invasion is mediated by the essential interaction between Plasmodium vivax Duffy binding protein region II (DBPII) and human host reticulocytes, making DBPII a leading vaccine candidate. However, DBPII is polymorphic, resulting in natural immunity that is often strain-specific and short-lived.

To overcome this, USF scientists have created an engineered protein, with specific point mutations at the most polymorphic site in DBPII. This engineered protein is able to elicit a broadly neutralizing immune response by targeting multiple strain-transcending conserved epitopes of P. vivax. This approach may lead to a whole new generation of vaccines for the treatment and prevention of malaria.

**ADVANTAGES:**
- Effective against Plasmodium vivax
- Broader immune response

Tech ID # 15B166