

# **PIECING TOGETHER THE *PLASMODIUM FALCIPARUM* GENOME PUZZLE: CHARACTERIZATION OF GENES/PROTEINS PFE0565W AND PF11\_0394**

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## **ABSTRACT**

Malaria is still a significant problem around the world and, thus, better control methods are in great need. A key stage in the *Plasmodium* life cycle is the sporozoite because it exhibits dual infectivity in both the mosquito vector and vertebrate host and, therefore, is a promising target for discovering effective ways of controlling malaria. The *P. falciparum* genes, *PFE0565w* and *PF11\_0394*, were chosen as candidates for study based on data available on PlasmoDB, the *Plasmodium* database, indicating that they are expressed both at the transcriptional and protein levels in sporozoites and likely encode putative surface proteins. Transcripts of both *PFE0565w* and *PF11\_0394* are present in both mosquito and vertebrate host life cycle stages, but both of their proteins are specific to salivary gland sporozoites as shown by immunofluorescent assays and/or GFP-trafficking studies. Functional studies for *PFE0565w* are currently in progress to determine if it may play a role in parasite development and/or invasion of host tissues. Because *PFE0565w* and *PF11\_0394* do not have homology with any human proteins, they could be targets for new drugs and/or vaccines. Lastly, in addition to studies conducted with *P. falciparum*, a preliminary comparative study between the *P. berghei* orthologs of *PFE0565w* and *PF11\_0394*, *PBANKA\_111090* and *PBANKA\_091050*, respectively, was conducted.