ABSTRACT

Background: Malaria morbidity and mortality, almost entirely from *Plasmodium falciparum*, are still rampant in Africa: therefore, it is important to study the biology of the parasite and the parasite-host cell interactions. *In vitro* cultivation of *Plasmodium falciparum* is most useful for this purpose, as well as for investigating drug resistance and possible new therapies. Here we report that the Trager & Jensen continuous culture of *P. falciparum* can be established in a laboratory in Tanzania with minimal facilities and with modest expenditure. Methodology: This was an *in-vitro* set up of continuous culture of *Plasmodium falciparum* study, carried out in 2016-2020 at Muhimbili University of health and allied sciences, Dar-es salaam. Parasite samples were obtained from patients with acute malaria, frozen parasites, and live cultures. Data was collected and analyzed using GraphPad Prism version 8. Results: We have successfully achieved exponential growth of existing strains that are used worldwide, as well as of parasites in clinical samples from patients with acute malaria. In the aim to optimize growth we have compared human serum and bovine serum albumin as components of the culture media. Additionally, culture synchronization has been achieved using sorbitol. Conclusion: This experimental system is now available to our institution and to researchers aiming at investigating drug sensitivity and mechanisms of protection against *Plasmodium falciparum* that accrue from various genes expressed in red cells.

Keywords: Albumax II and Human sera; Plasmodium falciparum; in vitro cultures.