Proceedings International
Platinum Open Access Journal (ISSN 2668-6384)

Proceedings, Abstract
Volume 3, Issue 5, 2021, 83
https://doi.org/10.33263/Proceedings35.083

Invasion of Host Cells by Malaria Parasite: An Insight Into Novel Therapeutic Target †

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† International Conference on Advanced Materials for Next Generation Applications, 29th – 30th September, 2021 (AMNGA-2021)

Received: 10.09.2021; Revised: 20.09.2021; Accepted: 21.09.2021; Published: 29.09.2021

Abstract: The malaria mortality burden accounts from 0.3–2.2% globally. Malaria is a vector-born infectious disease caused by different species of genus plasmodium, which is transmitted to human beings by infected *Anopheles* female mosquito. The reported burden of morbidity and mortality of this deadly disease requires attention aiming to improve the prevention, diagnosis, and treatment of malaria. An extensive review of the literature was done to study the invasion mechanism of *Plasmodium* on the host cells. The bites of infected *Anopheles* female mosquito deliver out the sporozoites of *Plasmodium*; after that, it enters the human blood, and subsequently, it gets into the hepatocytes of an infected individual. This complex life cycle of the malaria parasite exhibits sequential events of parasite invasion onto the host erythrocytes cells, which require the involvement of specialized proteins and receptors. The present focuses on the conserved mechanisms underlying host cell invasion by the *Plasmodium species*, the molecular events involved in this highly complex biological process, and the role of different proteins at different stages of the parasitic lifecycle for a better understanding of underlying disease pathology and also for providing novel therapeutic interventions to combat this disease.

Keywords: malaria; plasmodium; anopheles; merozoites; hepatocytes; erythocytes invasion; parasitophorous vacuole.

Funding

This research received no external funding.

Acknowledgments

The authors express their gratitude and thanks to Dean, SBAS, and Galgotias University, Greater Noida.

Conflicts of Interest

The authors declare no conflict of interest.