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Dr V. Arun Nagaraj has made seminal contributions in the field of malaria parasite biology, leading to new drug discovery that would contribute to the global goal of malaria elimination. He has deciphered the functional significance of heme synthesis in the life cycle of Plasmodium. He has provided new insights on the role of blood-stage parasite heme in regulating food vacuole integrity, hemozoin formation and cerebral pathogenesis accounting for parasite virulence and disease severity. He has shown that griseofulvin - a FDA-approved antifungal inhibits parasite heme synthesis and it can be repurposed as an adjunct drug with the existing artemisinin-based combination therapies (ACTs) to prevent malaria mortality. He has also identified parasite glutamine synthetase as a new drug target for falciparum malaria. His findings have highlighted the distinct evolution of parasite glutamine synthetase with unique structural and regulatory mechanisms. The parasite enzyme has evolved to adapt to the blood-stage niche and febrile temperature, and it supports asparagine synthesis that is essential for the asparagine-rich proteome of *P. falciparum*. Targeting GS with transition-state analogues inhibits protein synthesis in *P. falciparum,* and is a promising target against artemisinin resistance. He has identified two new drug targets, and taken two molecules - griseofulvin and curcumin from turmeric for clinical trials with industry participation. The basic findings are published in highly reputed journals.

Gpadmanaban

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