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Sommario/riassunto	Despite significant progress in the global fight against malaria, this parasitic infection is still responsible for nearly 300 million clinical cases and more than half a million deaths each year, predominantly in African children less than 5 years of age. The infection starts when mosquitoes transmit small numbers of parasites into the skin. From here, the parasites travel with the bloodstream to the liver where they undergo an initial round of replication and maturation to the next developmental stage that infects red blood cells. A vaccine capable of blocking the clinically silent liver phase of the Plasmodium life cycle would prevent the subsequent symptomatic phase of this tropical disease, including its frequently fatal manifestations such as severe anemia, acute lung injury, and cerebral malaria. Parasitologists,

immunologists, and vaccinologists have come to appreciate the complexity of the adaptive immune response against the liver stages of this deadly parasite. Lymphocytes play a central role in the elimination of Plasmodium infected hepatocytes, both in humans and animal models, but our understanding of the exact cellular interactions and molecular effector mechanisms that lead to parasite killing within the complex hepatic microenvironment of an immune host is still rudimentary. Nevertheless, recent collaborative efforts have led to promising vaccine approaches based on liver stages that have conferred sterile immunity in humans – the University of Oxford's Ad prime / MVA boost vaccine, the Naval Medical Research Center’s DNA prime / Ad boost vaccine, Sanaria, Inc.'s radiation-attenuated whole sporozoite vaccine, and Radboud University Nijmegen Medical Centre’s chemoprophylaxis with sporozoites vaccine. The aim of this Research Topic is to bring together researchers with expertise in malariology, immunology, hepatology, antigen discovery and vaccine development to provide a better understanding of the basic biology of Plasmodium in the liver and the host’s innate and adaptive immune responses. Understanding the conditions required to generate complete protection in a vaccinated individual will bring us closer to our ultimate goal, namely to develop a safe, scalable, and affordable malaria vaccine capable of inducing sustained high-level protective immunity in the large proportion of the world’s population constantly at risk of malaria.