



Universiteit  
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## **Malaria vaccinology: from the development of a new malaria vaccine to the ethics of clinical trial participation**

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## Stellingen

### Behorende bij het proefschrift getiteld

#### **“Malaria vaccinology: from the development of a new malaria vaccine to the ethics of clinical trial participation”**

1. GA2, the first late-arresting genetically attenuated parasite to be developed and tested in humans, has shown to be both safe and well-tolerated with high rates of protection in malaria-naïve individuals. **This thesis**
2. We have shown that the efficacy of whole sporozoite vaccines can be improved by prolonging their permanence in the host: extensive exposure to the immune system, wider antigenic variability and increased biomass of late-arresting parasites are likely the cause of their enhanced immunogenicity. **This thesis**
3. Genetically attenuated parasites offer a new hope as they can be made to arrest at various timepoints in the developmental cycle without sacrificing safety. **This thesis**
4. Considering that the duration of the hepatic stage is the most significant difference between early and late-arresting genetically attenuated parasites, our results highlight the importance of the liver for sterile protective immunity against malaria. **This thesis**
5. In order to safeguard the ethics of clinical trials involving humans, it is important to understand the underlying motivations of participants and to keep the discussion alive. It is the awareness of the question and not so much the answer that helps protect the ethical norm and the rights of medical volunteers. **This thesis**
6. Because the liver is the site where parasites must be eliminated to prevent blood-stage malaria infection, vaccines must be able to efficiently generate T cell responses that will be induced in, or migrate to, the liver. **Cockburn & Seder, Nature Immunology 2018**
7. Thus, for vaccines seeking to induce protective T cells, vaccine development efforts may be misled by focusing solely on maximizing T cell responses in the blood without considering how the vaccination strategy affects T cell responses at the infection site. **Ishizuka et al., Nature Medicine 2016**
8. The resort to equipoise to guide decisions about evaluation of new treatments rests on a flawed intuition that study participants are harmed or wronged by being denied access to a promising but partially evaluated treatment. **Miller & Joffe, New England Journal of Medicine 2011**
9. Human challenge studies involve the intentional infection of research participants and can accelerate or improve vaccine development by rapidly providing estimates of vaccine safety and efficacy. **Jamrozik & Selgelid, The Lancet Infectious Diseases 2020**
10. We carry so many burdens, yet for what? The beach has been under the cobblestones all along. **Cousin, 1968**
11. Life is not always easy, but it is in those moments of darkness that I remind myself that “if you look for the light you can often find it.” **Uncle Iroh from Avatar the Last Airbender, TV show originally created by DiMartino & Konietzko 2005-2008**
12. As I have grown up and grown older, I have learned to deal with stress a little better: pivotal to me in this case were the words of Samuel Shem, who stipulated that “at a cardiac arrest, the first procedure is to take your own pulse.” **Shem, The House of God 1978**