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A supramolecular chemistry approach for potentiating live attenuated whole-organism vaccines

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Stellingen behorende bij het proefschrift:

A supramolecular chemistry approach
for potentiating live attenuated whole-organism vaccines

1. The recent plateauing of annual deaths attributed to malaria underscores the urgent need for an effective vaccine. [WHO World Malaria Report 2021]
2. Whole-organism malaria vaccines appear immunogenically underpowered for use in malaria-endemic areas. [Sissoko et al. 2017. Lancet Infect Dis.]
3. Physically coupling immunogenic adjuvants to a vaccine yields superior pro-inflammatory responses compared to a traditional cocktail of the two. [Francica et al. 2016. Biconjug Chem.]
4. The right adjuvant can induce the right immune response. [Wille-Reece et al. 2005. PNAS.]
5. Supramolecular chemistry can be harnessed to chemically augment live cells with exogenous molecular moieties. [This thesis]
6. Exogenous molecular moieties augmented to cells via supramolecular chemistry remain stably associated with those cells in more complex *in vivo* environments. [This thesis]
7. Bacterial cells whose surface has been chemically augmented with adjuvants induce a more pronounced pro-inflammatory immune response in sentinel immune cells. [This thesis]
8. Administration of malaria sporozoites chemically augmented with adjuvants in a mouse model induces a more pronounced pro-inflammatory response *in vivo*. [This thesis]
9. Basic research of the marvelously complex organism that is malaria should not be discounted in the search for solutions to address the acute problems caused by this sly parasite.
10. The quality of a PhD *education* could be considerably improved by providing a contract until submission of the dissertation.
11. The business ethos creeping into academic research stymies the sort of open-ended scientific inquiries that in the past have led to conceptual breakthroughs.