

Report Option - Plasmodium and Advanced Immunology/Vaccine Development

Paper: Arnot *et al.*, "Comparative Testing of Six Ag-Based Malaria Vaccine Candidates Directed Toward... *Plasmodium falciparum*," in *Clinical and Vaccine Immunology*, 2008, p. 1345-1355.

Section One – Big Picture:

- a. Using your textbook and other sources that you cite, name and compare the FOUR most prevalent species that cause malaria. Briefly explain their life cycle, defining sporozoite, schizont, and merozoite. In terms of this life cycle, what THREE things are most candidate vaccines aimed at blocking?
- b. Of the 100 candidate vaccines, what THREE Ag are most prominently represented? Describe each in terms of what they do for the pathogen. THOROUGHLY describe the SIX candidate vaccines compared by this group – what do they represent, how were they made, why are they different, anything else noteworthy?

Section Two – ELISA's and IFA's:

- a. For IFA's, briefly their specific detection system. Next, explain which table and/or figure is about IFA-related methods/results and what is the take-home message?
- b. For ELISA's, briefly describe their specific detection system. Next, explain which table and/or figure is about ELISA-related methods/results and what is the take-home message?

Section Three – Advanced Immuno-Diagnostics:

- a. Explain ONE of the following approaches to GIA's: EITHER flow cytometry (look up and cite your sources for how this works) OR studies in rabbits. For each, name and describe key tables and/or figures with the data and detail the take-home message of each.
- b. Carefully explain their GIA experiments using microscopic analysis. How were these experiments done and what kinds of data were they looking for? Explain which table and/or figure is about GIA-microscopic methods/results and what is the take-home message?