IFReC Seminar

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Abstract

Vaccines targeting sexual development of malaria parasites in the mosquito midgut represent an essential tool to achieve the goal of gradual malaria elimination, ultimately eradication. Gametocyte and gamete proteins (P230 & P48/45: pre-fertilization antigens) and zygote / ookinete proteins (P25 & P28: post-fertilization antigens) have been pursued as target antigens, and the results in *P. falciparum* have further supported their importance as prime vaccine candidates. Although analogous proteins are also present in *P. vivax*, antibodies against *P. falciparum* antigens do not cross react with *P. vivax*antigens and thus development of *P. vivax*TBV also becomes an important goal to address the challenge of malaria elimination, especially for deployment in areas where the two co-exist. Pre-fertilization antigens are particularly important candidates because they are targets of natural immune responses during infection and thus could benefit from likely natural boosting of vaccine elicited immune responses. We have been evaluating DNA vaccines as well as recombinant proteins in our studies. In spite of the fact that methods like in vivo electroporation markedly enhance immunogenicity of DNA vaccines in mice, they still are in need of further improvements for evaluation in larger nonhuman primates and humans. We have recently reported on successful expression of full length Pfs48/45 protein in *E. coli* and highly effective functional immunogenicity in pre clinical studies in mice and baboons. Studies are now in progress to develop this antigen for phase I clinical trial in near future. We have recently also begun to develop expression strategies for Pvs48/45 and hope to evaluate immunogenicity of combined Pfs48/45 and Pvs48/45 cocktail targeting transmission of both *P. falciparum* and *P. vivax*.

Wednesday, January 12, 2011
10:00am-11:30am

Taniguchi Memorial Hall,
1F Integrated Life Science Bld.
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