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## Dr Joshua Tan

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**Monday 21st Aug 2023**

09:00am to 10:00am (SGT)

**Join Zoom Meeting [here](#)**

Meeting ID: 968 4991 6632

Passcode: 964333

### Unusual antibody responses to COVID-19 and malaria

Monoclonal antibodies are coming of age as powerful tools for the prevention and treatment of infectious diseases. Here, we describe the investigation of antibodies against two pathogens: SARS-CoV-2 and Plasmodium falciparum. From COVID-19 convalescent donors, we used an epitope-agnostic approach to identify two groups of spike-specific monoclonal antibodies that broadly neutralize diverse coronaviruses. The first group targeted the fusion peptide region adjacent to the S2' cleavage site and the second group targeted the stem helix region at the base of the S2 subunit. Top neutralizers from both antibody classes neutralized all SARS-CoV-2 variants of concern including XBB.1.16, inhibited fusion mediated by SARS-CoV-2 spike, and limited disease caused by SARS-CoV-2 in a Syrian hamster model. The second section of the talk focuses on rare antibodies that target an unusual epitope on P. falciparum sporozoites. Several of these antibodies were able to reduce liver parasite burden in an in vivo model of malaria infection. We describe our efforts to characterize the function and target epitopes of these antibodies, which can complement existing anti-sporozoite interventions.

**Dr Joshua Tan** is Chief of the Antibody Biology Unit at the Laboratory of Immunogenetics and a Stadtman Investigator at the National Institute of Allergy and Infectious Diseases, National Institutes of Health. He received his Ph.D. from the University of Oxford. His research focuses on studying the human antibody response to infectious pathogens, including Plasmodium falciparum, SARS-CoV-2 and Mycobacterium tuberculosis. His recent work includes the isolation of broadly neutralizing antibodies targeting cryptic coronavirus epitopes and the study of unusual antibody responses to P. falciparum.

**Hosted by : Prof Lisa Ng**

Webinar is open to all. No registration required

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