Dear All

This week we have **Dr. Narmada** from Experimental Drug Development Centre, A*STAR for the Biogroup seminar.

Please find the CV attached.

Speaker: Narmada Balakrishnan Chakrabani

Date: 23/9/22 at **3 PM**

BT Seminar hall

Title: Intrahepatic immune regulatory mechanisms underlying the functional cure of Chronic HBV

Abstract:
Chronic hepatitis B (CHB) infection is currently treated with short term interferon therapy or direct acting antivirals (nucleoside analogs) that is associated with a reduction in the incidence of hepatic decompensation, HCC, but NUCs requires long term administration, and carry the risk of developing resistance and in adverse events. Functional cure of CHB focuses on controlling viral replication, achieving a loss of Hepatitis B S-Antigen (S Loss), and retarding the progression to severe disease and HCC. During acute HBV infection, resolution is by cohesive activation of the innate immune system followed by strong adaptive immune response in the host mediated by an effective virus-specific T cell response. HBV modulates the host immune system through multiple pathways (some known and others largely unknown) leading to viral persistence and chronic infection. In such cases, the innate immune activation is weak and the adaptive immune response is also rendered defective enabling the prolonged persistence of the virus within the host. In this study we perform single cell transcriptomic analysis on core needle liver biopsies of ~23 chronic HBV patients who either responded to treatment (FC) or those who did not respond to treatment (CHB). Specifically the immune profile of these two patient groups begin to

have clear differences in the adaptive (cytotoxic T cells), innate immune subsets (NK cells & Neutrophils) between responders and non-responders in the antigen presentation and innate immune activation pathways that might boost cell-intrinsic immunity to resolve the long standing viral infection. The study sheds light on multiple host regulatory mechanisms that makes the host vulnerable to viral infection and might help in clearance. In the future, some of these mechanistic targets may be applied in the design of host-directed therapeutics in combination with current antivirals to deliver a strong and sustained functional cure from HBV.