



THE CHINESE UNIVERSITY OF HONG KONG  
FACULTY OF MEDICINE  
DEPARTMENT OF PAEDIATRICS



Research Meeting on  
**Probing basophil function in microfluidic systems  
for food allergy diagnosis**



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and by courtesy of Bioengineering and Radiology  
(Precision Health and Integrated Diagnostics)  
Stanford University

**Abstract:**

Basophils are rare, constituting 0.1% - 1% of circulating white blood cells, but they play a critical role in allergic reactions. The basophil activation test (BAT) has emerged as a powerful ex vivo functional assay for food allergy assessment, and has recently been included as a recommended test in the European Academy of Allergy & Clinical Immunology guidelines on the diagnosis of IgE-mediated food allergy. The BAT has been shown to have a higher accuracy than skin prick test and serum IgE tests in assessing food allergies. For peanut, our team and others have shown the BAT has sensitivity and specificity above 90%. Nevertheless, access to the BAT has been hindered by the requirement for fresh blood analysis, specialized laboratory equipment, and advanced technical expertise. To address these issues, we have developed a microfluidic sample preparation “ $\mu$ F-prep” device to perform the most time sensitive steps of the assay and stabilize the sample, effectively extending the time window before flow cytometry analysis. In addition, we will describe our recent efforts to isolate basophils efficiently from small volumes of whole blood to facilitate downstream analysis of basophil function.



6 February 2025



1:00 – 2:00 P.M.



Seminar Room, 6/F, Lui Che  
Woo Clinical Sciences  
Building, Prince of Wales  
Hospital, Shatin.



Zoom Meeting

<https://cuhk.zoom.us/j/96095879986?pwd=fVNaupbH5kEU9UF1BqMfEbzlW2mXjz.1>

Meeting ID: 960 9587 9986

Passcode: 278878

ALL ARE WELCOME