PROSセミナー

愛媛大学プロテオサイエンスセンター　マラリア研究部門主催

日 時：令和6年2月6日(火) 13:30～14:30
場 所：プロテオサイエンスセンター 城北ステーション 4階 会議室
(松山市文京町３番)

Using mass cytometry to track human infectious disease and vaccine responses.

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Human immune responses to infectious disease are complex, often involving interactions of rare cells from multiple branches of the immune system. In the case of humoral immunity antigen specific memory B-cells, T-follicular helper cells (Tfh) and T-follicular regulatory T-cells (Tfr) all play key roles. Additionally, immune responses are highly dependent on time and may change radically over just a few days during infection or vaccination. Together these factors emphasize the need for methods that allow assessment of finely defined immunophenotypes across time in large longitudinal cohorts. To address this, we developed a methodology for large-scale screening of human clinical samples by mass cytometry (CyTOF). This allows measurement of 100-140 markers split across multiple antibody panels designed to provide simultaneous fine immunophenotyping of CD4, Treg, Tfh, γδT, CD8, NK, B-cells, monocytes and DCs. We have applied it to cohorts of longitudinal COVID-19, bacterial sepsis, and mRNA vaccination, covering over 600 samples from 200 individuals. Using this approach, in combination with CITE-seq and CyTOF based in vitro assays we have uncovered novel insights into the interactions and phenotypes of T and B-cells responding to COVID-19 and vaccination. We demonstrate that SARAS-COV2 specific memory B-cells are made up of CD27+ classical memory, Atypical memory and novel third branch defined by expression of CD23 and IL4 receptor.

事前申し込みは不要です、直接会場にお越しください。
感染予防のため、当日体調のすぐれない方は参加をお控えください。

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