

2022 年度 第 55 回 大学院セミナー

Graduate School of Biomedical Sciences Seminar

2023 年 1 月 5 日

分野名 Department (責任者名)(内線)	病原原虫学分野 Dept of Medical Protozoology 責任者名(Osamu Kaneko) 内線(7838)
演題 Title	Malaria: new insights into the rosetting phenomenon
講師等 Presenter	Laurent RÉNIA, PhD Professor of Infectious Diseases, Director of the Respiratory and Infectious Diseases programme, Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore Senior fellow and Senior Principal Investigator, Pathogen Immunobiology Lab, A*STAR Infectious Diseases Labs, Singapore
概要 Abstract	Malaria remains one of the deadliest infections in humans. After a successful invasion, malaria parasite Plasmodium parasites extensively remodels the infected erythrocyte cellular architecture, conferring to infected erythrocytes cytoadhesive properties. One of the interesting biological phenomena by late stage infected red blood cells (IRBC) of all malaria species is their capacity to form rosettes with non-infected RBC. This phenomenon that has been associated for P. falciparum with severity of the infection in some but not all studies. Here, we have characterized the rosetting prevalence of P. falciparum and P. vivax isolates from the Thai Myanmar border and found that factors derived from host's monocytes stimulated with IRBC were capable of stimulating rosette formation. Insulin-like growth factor binding protein 7 (IGFBP7) was the most potent factor for induction of rosettes. The IGFBP7-mediated rosetting in P. vivax and P. falciparum was compared. Subsequent experiments with laboratory-adapted P. falciparum lines revealed the complexity of IGFBP7-induced rosetting, which required involvement of another two host-derived factors, thrombospondin, and Von Willebrand Factor. Importantly, this phenomenon hampers phagocytosis of the IRBCs, suggesting that the parasites use IGFBP7 as a signal to detect approaching monocytes/ macrophages, and form more rosettes to escape phagocytosis. Lastly, more recently, we also demonstrated a role for rosetting in the acquisition of drug resistance by the parasites.
開催日時 Date & Time	2023 年 1 月 25 日(水) Jan/25/2023 16:10 ~ 17:00
場所 Face to face	グローバルヘルス総合研究棟 1F 大会議室 Seminar Room, School of Tropical Medicine and Global Health 1F
備考 Notes	

先端医療科学特論 (基礎編)

先端新興感染症病態制御学特論

日本語 (Japanese)

対面 (Face to face)

先端医療科学特論 (臨床編)

先端放射線医療科学特論

英語 (English)

オンライン(Online)