

## 大学院特別講義のご案内/Special lecture for graduate students

( 医歯学先端研究特論 )( 生命理工医療科学先端研究特論 )( 医歯理工学先端研究特論 )

医歯学総合研究科 寄生虫学・熱帯医学分野 教授 石野智子

Department of Parasitology and Tropical Medicine, Tomoko Ishino Ph.D

下記のスケジュールで、東京大学医科学研究所 教授の Cevayir Coban 先生に、マラリア感染に関連する免疫機構についてご講演いただきます。

Cevayir Coban 先生は、アメリカ合衆国 Johns Hopkins University でマラリア原虫の伝搬阻止ワクチンの研究を行ったのち、大阪大学免疫学フロンティア研究センターなどで、免疫の研究を長く続けられ、2019 年に現所属に移動されました。宿主-寄生体の相互作用解析、免疫感染症学、ワクチン開発など精力的に取り組んでおられます。今回は、初のマラリアワクチン RTS,S についても、ご紹介いただけます。



多くの皆様のご参加をお待ちしております。単位認定の関係上、大学院生は 2/27(木)までに以下に出席の連絡をしてください。担当友田: misato.vip@tmd.ac.jp

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**日時： 2025 年 3 月 3 日 10 : 00-12 : 00**

**講師：Cevayir Coban 博士、東京大学 医科学研究所 マラリア免疫学分野 教授**

**タイトル：Host and *Plasmodium* interactions: Where are we with vaccines?**

**実施言語：英語**

**実施場所：共用講義室 2 (M&D 7F- 2 階)**

**講演要旨：** Parasitic diseases represent a significant global health concern, particularly in tropical and subtropical regions. Diseases such as malaria affect millions of people each year, leading to severe morbidity and mortality. Despite advancements in diagnosis and treatment, preventive measures such as vaccination are crucial for the control and eventual elimination of these diseases.

Parasites exhibit complex life cycles and host interactions, making the development of a single-target vaccine challenging. Their ability to evade host immune responses through antigenic variation and immune suppression further complicates vaccine design. Unlike viral or bacterial infections, many parasitic infections do not elicit strong or long-lasting immune responses, which poses additional challenges for vaccine development

The malaria vaccine (RTS,S/AS01) has demonstrated partial efficacy against *Plasmodium falciparum*. Although its effectiveness is not complete, it represents a significant milestone in the development of vaccines against parasitic diseases. In my talk, I will provide an update on recent advancements in vaccine research for malaria and my lab's research to tackle issues with malaria vaccines

## **Cevayir COBAN, M.D., Ph.D. (Clinical Microbiology)**

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### **Specialty & Research Field of Interest**

Protozoan parasites-host interactions, Immunopathology, Vaccine

### **Selected References**

1. Lee MSJ et al. Acute malaria suppresses the B lymphocytic niche in the bone marrow through the alteration of CXCL12-abundant reticular cells. **International Immunology**, **2024**; dxae012.
2. Lee MSJ et al. B cell intrinsic TBK1 is essential for germinal center formation during infection and vaccination in mice. **Journal of Experimental Medicine**, **2022**, Feb 7;219(2):e20211336.
3. **Coban C**. The host targeting effect of chloroquine in malaria. **Current Opinion in Immunology**, **2020**, Oct;66:98-107.
4. **Coban C**, Lee MSJ, Ishii KJ. Tissue-specific immunopathology during malaria infection. **Nature Reviews Immunology**, **2018** doi:10.1038/nri.2017.138.
5. Lee MSJ et al. Plasmodium products persist in the bone marrow and promote chronic bone loss. **Science Immunology**, **2017**, June 2; 2 (12), pii: eaam8093.
6. Zhao H et al. Olfactory Plays a Key Role in Spatiotemporal Pathogenesis of Cerebral Malaria. **Cell Host Microbe**, **2014**, 15(5): 551-63.