IN VITRO ASSESSMENT OF THE ANTIPLASMODIAL ACTIVITY OF BACTERIAL FRACTIONS WITH MYXOBACTERIAL-LIKE FEATURES AGAINST *PLASMODIUM FALCIPARUM*

Agatha Fernandes B. Silva[1], Camila S. Barbosa[1], Ana C. Longuini[1], Renan S. Oliveira[2], Paula C. Jimenez[2], Anna Caroline C. Aguiar[1].

[1]Department of Microbiology, Immunology and Parasitology, Federal University of São Paulo, São Paulo, SP, Brazil.
[2]Department of Biosciences, Federal University of São Paulo, Santos, SP, Brazil.
corresponding author: agathx13@gmail.com

Introduction: Malaria remains a critical global health challenge with the African region bearing over 94% of the burden. The alarming emergence of *Plasmodium falciparum* strains resistant to artemisinin-based combination therapies in East Africa underscores the urgent need for novel antimalarial classes. Historically, natural products have played a central role in antimalarial discovery, yielding pivotal drugs such as quinine and artemisinin. In this context, bacterial metabolites represent an underexplored reservoir of novel chemical structures with biological activity. **Objectives:** To evaluate the *in vitro* susceptibility of *P. falciparum* (3D7 strain) to fractions derived from environmental bacterial isolates exhibiting myxobacterial-like features. **Methods:** Antiplasmodial activity was assessed using the SYBR Green I fluorescence assay. Bacterial fractions were tested in duplicate against the 3D7 strain using two-fold serial dilutions (5–50 µg/mL). **Results:** Seven fractions were tested against the *P. falciparum* 3D7 strain. With the exception of fraction 08.F6, all samples inhibited parasite growth. Among them, Fraction F14 stood out with superior potency, displaying remarkable inhibitory action with a mean IC_{50} of 0.9 ± 0.4 µg/mL. **Conclusions:** Fraction F14 is a promising antimalarial source. Mass spectrometry suggests a myxothiazol derivative targeting the electron transport chain, explaining its high potency. Future studies will isolate and characterize the active molecules.