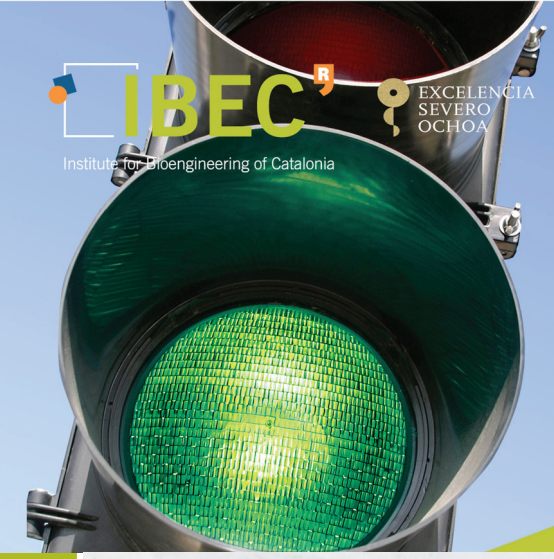

IBEC
Institute for Bioengineering of Catalonia

EXCELENCIA SEVERO OCHOA

Fellowships IBEC International PhD Programme

A green light for your future

Nanomalaria group

Group leader: Xavier Fernández Busquets

Exploration of protein aggregation as an antimalarial design strategy

Malaria is one of the main medical concerns worldwide. However, current approaches do not offer prospects of complete protection and the front-line drugs are rapidly losing efficacy, with resistance already developed to the first-line drug artemisinin. Thus, alternative strategies working through radically new mechanisms are urgently needed. We offer a position to explore protein aggregation as a new antimalarial drug concept. The abundance of aggregation-prone prion-like domains in Plasmodium falciparum suggests that induction of this mechanism might promote the collapse of the proteostatic machinery in this organism. Studies of prion toxicity for the host cell will be carried out in Plasmodium-infected red blood cells and also in ookinetes, a Plasmodium stage generated in the insect vector.

Confocal fluorescence microscopy analysis of the binding of fluorescein-labeled heparin to Plasmodium berghei ookinetes.