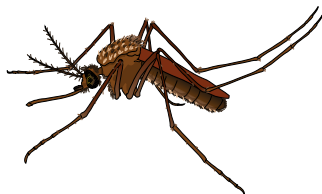


Cysteine-Proteases Inhibitors to Treat Malaria

Malaria

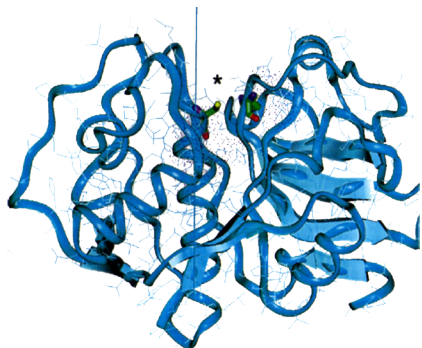
About 3.3 billion people—half of the world's population—are at risk of malaria. Every year, this leads to about 250 million malaria cases and nearly one million deaths. People living in the poorest countries are the most vulnerable.



Malaria is especially a serious problem in Africa, where one in every five (20%) childhood deaths is due to the effects of the disease. An African child has on average between 1.6 and 5.4 episodes of malaria fever each year. And every 30 seconds a child dies from malaria.

Project Description

A number of cysteine proteases of malaria parasites have been described, and many more putative cysteine proteases are suggested by analysis of the *Plasmodium falciparum* genome sequence. Studies with protease inhibitors have suggested roles for cysteine proteases in hemoglobin hydrolysis, erythrocyte rupture, and erythrocyte invasion by erythrocytic malaria parasites. The best characterised *Plasmodium* cysteine proteases are the falcipains, a family of papain-family (clan CA) enzymes. Falcipain-2 and falcipain-3 are hemoglobinases that appear to hydrolyse host erythrocyte hemoglobin in the parasite food vacuole.



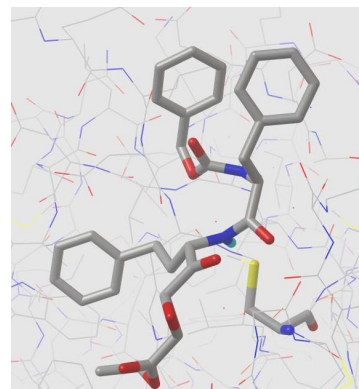
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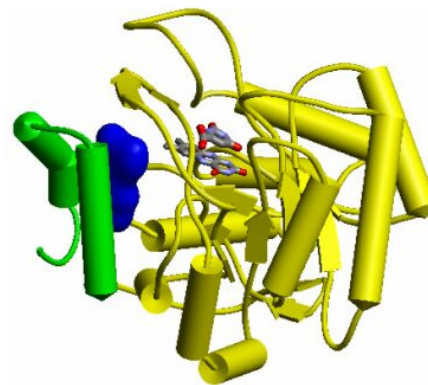


Project Description

The research group from University Jaume I led by Dr. Florenci V. González (<http://orgmedchem.uji.es>) has developed a new family of inhibitors of the cysteine proteases, a key for the life-cycles of different tropical infectious diseases such as Malaria, Chagas, Leishmania and others.



Docking studies have led to obtain the peptide-mimetic inhibitors of the cysteine proteases. In vitro studies showed a good inhibitory profile for *Plasmodium falciparum*.



Partnering Opportunity

Genoma España manages a collaboration agreement between the research group and University Jaume I which will support and fund the proof of concept studies in animals and the optimization of preclinical development, as well as undertaking to help achieve the commercialization of these compounds. The group is looking for a collaboration and/or license agreement.

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