Scientists demonstrate feasibility of preventing malaria parasite from becoming sexually mature

June 2 2008

Researchers have demonstrated the possibility of preventing the human malaria parasite, Plasmodium falciparum, which is responsible for more than a million malaria deaths a year, from becoming sexually mature.

The discovery could have implications for controlling the spread of drug resistance, which is a major public health problem and which hinders the control of malaria.

The life cycle of Plasmodium falciparum is complex, and it is not yet known what triggers the production of parasite gametes or sex cells. These sexual forms of the parasite do not contribute to malaria symptoms, but are essential for transmission of malaria between humans via the bite of a mosquito.

A team based at the London School of Hygiene & Tropical Medicine, working with a colleague from the Wellcome Trust Sanger Institute in Cambridge, identified a parasite enzyme that is instrumental in triggering the emergence of mature gametes within the mosquito. Their findings are published today in the journal PLoS Biology.

Dr. David A Baker, a Reader in Parasite Molecular Biology at the London School of Hygiene & Tropical Medicine and senior author of the study, comments: 'The enzyme we have discovered, a protein kinasea, is essential for the development of malaria parasite gametes.

Working with genetically modified parasites, in combination with inhibitors of this enzyme, we have demonstrated that it is feasible to block the sexual stage of the life cycle of the malaria parasite.

He adds: 'This has exciting implications in terms of improving how we go about tackling malaria. If a drug can be developed that targets this stage of the life cycle, and combined with a curative drug, it would be an important new approach for controlling malaria transmission and the spread of drug resistance'.

Source: London School of Hygiene & Tropical Medicine

Citation: Scientists demonstrate feasibility of preventing malaria parasite from becoming sexually mature (2008, June 2) retrieved 2 May 2024 from https://phys.org/news/2008-06-scientists-feasibility-malaria-parasite-sexually.html