New malaria agent found in chimpanzees close to that commonly observed in humans

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Researchers based in Gabon and France report the discovery of a new malaria agent infecting chimpanzees in Central Africa. This new species, named Plasmodium gaboni, is a close relative of the most virulent human agent *P. falciparum*; it is described in an article published May 29 in the open-access journal *PLoS Pathogens*.

P. falciparum is the major human malaria agent responsible for one to three million deaths annually. In 2002, the publication of the genome of *P. falciparum* generated new hopes in the fight against this deadly disease, by the opportunities it offered to discover new drug targets. However, the lack of known related genomes has limited the development of comparative genomics according to the study's researchers from Centre International de Recherches Médicales de Franceville, Centre National de la Recherche Scientifique, and l'Institut de Recherche pour le Développement.

To investigate the diversity of Plasmodium parasites circulating in chimpanzees in Africa, the team collected blood from 19 wild-borne animals kept as pets by villagers in Gabon. Two were found infected by a Plasmodium parasite. The sequencing of the parasite's whole mitochondrial genome revealed that it belonged to a previously undescribed species of Plasmodium, closely related to *P. falciparum*. Sequencing of the nuclear genome of this new agent should further the understanding of genomic adaptations of *P. falciparum* to humans and thus help discover new potential drug targets.

The development of comparative genomics to further understanding of *P. falciparum* has been hindered by a lack of knowledge of closely related species' genomes. Only one species, P. reichenowi, infecting chimpanzees, was previously known as a sister lineage of *P. falciparum*. Additional information on related species has thus been needed, making the discovery of *P. gaboni* an important step forward in exploring a possible relationship for malaria between chimpanzees and humans.

More information: Ollomo B, Durand P, Prugnolle F, Douzery E, Arnathau C, et al. (2009) A New Malaria Agent in African Hominids. PLoS Pathog 5(5): e1000446. doi:10.1371/journal.ppat.1000446, dx.plos.org/10.1371/journal.ppat.1000446

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