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Creating a new weapon in the fight against malaria

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Over 200 million people contract malaria each year, and according to the World Health Organization, an estimated 655,000 people died from malaria in 2010.

Malaria is caused by the parasite *Plasmodium*, which is transmitted to humans through mosquito bites. More effective control of malaria will require the development of new tools to prevent new infections.

Wesley Van Voorhis at the University of Washington in Seattle and Oliver Billker at the Wellcome Trust Sanger Institute in Cambridge, England assembled an international research team to tackle the challenge of finding new ways to combat malaria.

Their unique approach was to uncover a pathway that could block transmission of *Plasmodium* from humans to mosquitos, which represents a new strategy for controlling the spread of malaria.

They discovered a new class of malaria transmission-blocking compounds that work by inhibiting a protein known as bumped kinase I. Bumped kinase I is required for Plasmodium to transition to sporozoites stage, the stage in its life cycle when it is infectious to mammals. In mosquitoes that fed on blood treated with the bumped kinase inhibitor, *Plasmodium* sporozoite formation was blocked.

The research team showed preclinical data in mice indicating that bumped kinase inhibitors are safe and well tolerated.

Their results show that bumped kinase inhibitors target a new life cycle stage in *Plasmodium*, and suggest that these compounds merit further development as a new therapy for malaria control.

More information: www.jci.org/articles/view/6182 … bd73a892f008d6fa9cae

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