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Manipulating mosquitoes and malaria

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Malaria kills up to 2.7 million people a year and the death toll is predicted to double in the next two decades. In the May 23 Nature, Ito *et al.* describe a transgenic strategy to halt malaria by regulating transmission by mosquitoes of the *Plasmodium* parasites that cause the disease(*Nature* 2002, **417:**452-455). They used the carboxypeptidase (CP) promoter that is activated by a blood meal, and CP signal sequences that direct protein secretion into the midgut lumen, to drive expression of an SMI (salivary gland- and midgut-binding peptide 1) motif. They transformed this transgene into the germline of the mosquito Anopheles stephensi. When expression of the SMI peptide was induced, it inhibited parasite development, ookinete invasion and transmission. This is the first report of transgenic regulation of *Plasmodium* transmission and offers a novel strategy for combating malaria.

References

1. *Nature*, [http://www.nature.com]

2. Stable germline transformation of the malaria mosquito *Anopheles stephensi*.