This week in techniques

Approach	Summary	Licensing status	Publication and contact information
Assays & screens			
Inducible Tet repressor protein (TetR)-RNA interaction system for control of <i>Plasmodium falciparum</i> gene expression	<p>A system for controlling <i>P. falciparum</i> gene expression could be useful for identifying new targets and treatments for malaria. The system transfected <i>P. falciparum</i> with a DNA plasmid encoding TetR, a TetR-binding aptamer and a gene of interest whose translation was blocked by TetR protein-aptamer binding on the corresponding mRNA. Next, treatment with the TetR-binding compound anhydrotetracycline disrupted the TetR-aptamer interaction to enable gene expression. In proof-of-concept experiments, the system demonstrated anhydrotetracycline-inducible resistance to chloroquine treatment and verapamil-mediated reversal of that resistance in <i>P. falciparum</i> transfected with a <i>P. falciparum</i> chloroquine resistance transporter (<i>PfCRT</i>) allele that is associated with resistance to chloroquine. Next steps include using the system to identify genes essential to <i>P. falciparum</i> survival. The generic chloroquine is marketed to treat malaria. The generic calcium channel blocker verapamil is marketed to treat cardiovascular indications.</p> <p>SciBX 7(47); doi:10.1038/scibx.2014.1390 Published online Dec. 11, 2014</p>	Patent application filed; licensing status undisclosed	<p>Goldfless, S.J. <i>et al. Nat. Commun.</i>; published online Nov. 5, 2014; doi:10.1038/ncomms6329</p> <p>Contact: Jacquin C. Niles, Massachusetts Institute of Technology, Cambridge, Mass. e-mail: jcniles@mit.edu</p>