This week in techniques

Approach	Summary	Licensing status	Publication and contact information
Drug platforms			
Phage-assisted continuous evolution (PACE) to identify and predict drug-resistant protease mutations caused by protease inhibitors	<p>An <i>in vitro</i> method of directed evolution called PACE could help identify and predict drug-resistant protease mutations caused by protease inhibitors. The PACE platform links the phage life cycle to the cleavage activity of an HCV protease against its polypeptide substrate in an automated, continuous-flow format. After one to three days in the presence of Sunvepra asunaprevir or danoprevir, the PACE platform evolved resistance mutations in the protease targets of each compound that are known to emerge in patients with HCV. Ongoing work includes using the platform to evolve proteases with programmed target specificities.</p> <p>Sunvepra, an HCV NS3 protease inhibitor from Bristol-Myers Squibb Co., is approved to treat HCV infection.</p> <p>Roche and Ascleptis Pharmaceuticals Co. Ltd. have danoprevir, an HCV NS3/N4 protease complex inhibitor, in Phase II testing to treat HCV infection.</p> <p>SciBX 7(46); doi:10.1038/scibx.2014.1364 Published online Dec. 4, 2014</p>	Patented; available for licensing	<p>Dickinson, B.C. <i>et al. Nat. Commun.</i>; published online Oct. 30, 2014; doi:10.1038/ncomms6352</p> <p>Contact: David R. Liu, Harvard University, Cambridge, Mass. e-mail: drliu@fas.harvard.edu</p>