This week in techniques

Approach	Summary	Licensing status	Publication and contact information
Computational models			
Analysis of adverse events database to identify mechanisms underlying side effects	<p><i>In silico</i> and mouse studies suggest analysis of adverse events database can identify new targets that separate beneficial therapeutic effects from adverse events. In the FDA Adverse Event Reporting System (FAERS) database, incidence of myocardial infarction (MI) was lower in patients taking Avandia rosiglitazone and Byetta exenatide than patients taking Avandia alone. Network interaction analysis showed that pathways activated by Byetta and Avandia intersected at plasminogen activator inhibitor 1 (SERPINE1; PAI1). In a mouse model of diabetes, Avandia and Byetta normalized Pai1 levels and decreased clotting dynamics compared with Avandia alone. Next steps include identifying pathway interaction nodes for other drug combinations and testing in preclinical models.</p> <p>The peroxisome proliferation-activated receptor-γ (PPARG; PPARγ) agonist Avandia and the glucagon-like peptide-1 receptor (GLP-1R; GLP1R) agonist Byetta are marketed to treat diabetes by GlaxoSmithKline plc and Bristol-Myers Squibb Co., respectively.</p> <p>SciBX 6(45); doi:10.1038/scibx.2013.1302 Published online Nov. 21, 2013</p>	Patent application filed; available for licensing	<p>Zhao, S. <i>et al. Sci. Transl. Med.</i>; published online Oct. 9, 2013; doi:10.1126/scitranslmed.3006548</p> <p>Contact: Ravi Iyengar, Icahn School of Medicine at Mount Sinai, New York, N.Y. e-mail: ravi.iyengar@mssm.edu</p>