This week in techniques

Approach	Summary	Licensing status	Publication and contact information
Assays & screens			
Leukemia-stroma coculture system to screen for selective inhibitors of leukemia stem cells (LSCs)	<p>A leukemia-stroma coculture system could be used in high throughput screens for compounds that selectively inhibit LSCs. The 384-well system cocultures primary, LSC-enriched cell populations with bone marrow stromal cells and uses an automated machine-learning algorithm to identify compounds that could inhibit a behavior called cobblestone area formation. The system plus a series of safety filters were used to screen a library of 14,718 compounds, which yielded 15 top hits that selectively inhibited LSCs over normal hematopoietic stem and progenitor cells (HSPCs) and lacked toxicity against two bone marrow stromal cell types. Follow-up validation studies on one of the top screening hits, the generic HMG-CoA reductase inhibitor lovastatin, showed that the drug selectively killed LSCs over normal HSPCs in culture and prevented the development of leukemia in a mouse model. Next steps could include evaluating lovastatin and other top screening hits in combination with existing leukemia drugs in animal models.</p> <p>SciBX 6(46); doi:10.1038/scibx.2013.1331 Published online Dec. 5, 2013</p>	Patent and licensing status unavailable	<p>Hartwell, K.A. <i>et al. Nat. Chem. Biol.</i>; published online Oct. 27, 2013; doi:10.1038/nchembio.1367 Contact: Todd R. Golub, Broad Institute of MIT and Harvard, Cambridge, Mass. e-mail: golub@broadinstitute.org Contact: Benjamin L. Ebert, same affiliation as above e-mail: bebert@partners.org Contact: Stuart L. Schreiber, same affiliation as above e-mail: stuart_schreiber@harvard.edu Contact: David T. Scadden, same affiliation as above e-mail: dscadden@mgh.harvard.edu Contact: Malcolm A.S. Moore, Memorial Sloan-Kettering Cancer Center, New York, N.Y. e-mail: m-moore@ski.mskcc.org</p>